

Configuration parameters Metadata for Bio-argo floats

ACTION 23

Action 23 (Bio-Argo part)

Metadata

Update the Tables 25 and 27 (<http://tinyurl.com/nwpqvp2>)

The "SENSOR_MODEL" and "SENSOR" including Bio sensors are detailed, they are associated to a "SHORT SENSOR NAME".

These short names are used in the first version(V0.0) of the Bio Argo Configuration parameter names file

(Bio_Argo_Configuration_Parameter_Names_V0.0.xlsx, available at the Coriolis Web site)

Action 23 (Bio-Argo part)

Configuration parameters:

- Check the updated core Argo configuration parameter table (Esmee van Wijk)
- Check the new Bio Argo configuration parameter table (Catherine Schmechtig), to ensure that all their float types are covered. DACs to provide feedback to relevant person on any new required parameters that are not in the table.

Table 25 Sensor

FLUOROMETER_CDOM
FLUOROMETER_CHLA
IDO_DOXY
OPTODE_DOXY
RADIOMETER_DOWN_IRR
RADIOMETER_PAR
SCATTEROMETER_BBP
SCATTEROMETER_TURBIDITY
SPECTROPHOTOMETER_NITRATE
SPECTROPHOTOMETER_BISULFIDE
TRANSISTOR_PH
TRANSMISSOMETER_CP

Table 27
Sensor model

SUNA	UV absorption to derive nitrate and bisulfide (MBARI)
ISUS	Nitrate (MBARI)
SUNA_V2	Nitrate (SATLANTIC)
C_STAR	Transmissometer
C_ROVER	Transmissometer (WETLABS)
DURA	pH (MBARI)
SATLANTIC_OCR500	Multispectral radiometer (SATLANTIC)
SATLANTIC_OCR504	Multispectral radiometer (SATLANTIC)
SATLANTIC_OCR507	Multispectral radiometer (SATLANTIC)
FLBB	Fluorescence and Backscatter
FLNTU	Fluorescence and Turbidity
ECO_PUCK	Optical sensor (WETLABS)
ECO_[FL]_[BB]_[BB2]_[TRIPLET]_[CD]_[NTU]_[VSF]	WETLABS optical sensor packages

<i>SENSOR MODEL (27)</i>	<i>SENSOR (25)</i>	<i>Short Name</i>
SUNA	SPECTROPHOTOMETER_NITRATE, SPECTROPHOTOMETER_BISULFIDE	SUNA
ISUS	SPECTROPHOTOMETER_NITRATE	ISUS
SUNA_V2	SPECTROPHOTOMETER_NITRATE	ISUS
C_STAR	TRANSMISSOMETER_CP	CSTAR
C_ROVER	TRANSMISSOMETER_CP	CROVER
DURA	TRANSISTOR_PH	DURA
SATLANTIC_OCR500	RADIOMETER_DOWN_IRR,RADIOMETER_PAR	OCR
SATLANTIC_OCR504	RADIOMETER_DOWN_IRR,RADIOMETER_PAR	OCR
SATLANTIC_OCR507	RADIOMETER_DOWN_IRR,RADIOMETER_PAR	OCR
FLBB	FLUOROMETER_CHLA,FLUOROMETER_CDOM,SCATT EROMETER_BBP	FLBB
FLNTU	FLUOROMETER_CHLA, SCATTEROMETER_TURBIDITY	FLNTU
ECO_PUCK	???	ECO
ECO_[FL]_[BB]_[BB2]_[TRIPLET]_[CD]_[NTU] _[VSF]	???	ECO

Table 25, 27 : Sensor, Sensor model and Short name

=> Short names were set to shorten configuration parameters name

CONFIG_<short sensor name>DepthZone<N>DescentToProfilePresSamplingPeriod_seconds	Sampling period of the <short sensor name> during the descent to profile pressure in the depth zone #<N> (in seconds).
CONFIG_<short sensor name>DepthZone<N>DriftAtProfilePresSamplingPeriod_minutes	Sampling period of the <short sensor name> during the drift at profile pressure in the depth zone #<N> (in minutes).

Configuration parameters (mainly for PROVBI0III)

=> Short names were set to shorten configuration parameters name

CONFIG_SunaApfFrameOutputPixelBegin_NUMBER	The Apf frame definition allows for a variable number of spectrometer pixels (also called channels) to be included in the frame. The two pixel values are configured indirectly via the wavelength range of the spectrum to be output (Suna Hardware Manual, section 4.2.3, input/output configuration parameters, data wavelength low/high.) The firmware converts the wavelength values to spectrometer pixels.
CONFIG_SunaApfFrameOutputPixelEnd_NUMBER	The Apf frame definition allows for a variable number of spectrometer pixels (also called channels) to be included in the frame. The two pixel values are configured indirectly via the wavelength range of the spectrum to be output (Suna Hardware Manual, section 4.2.3, input/output configuration parameters, data wavelength low/high.) The firmware converts the wavelength values to spectrometer pixels.
CONFIG_SunaWithScoop_LOGICAL	Suna with scoop which redirects flow through Suna optics
CONFIG_<short sensor name>InPumpedStream_LOGICAL	Bio Argo sensors can either be mounted separately to the Ctd or mounted within the Ctd pumped stream. Values: Yes = 1, No = 0
CONFIG_NitrateSampling_NUMBER	Nitrate sampling flag. Values:<0:enable; 0:disable; >0:enable and initialize
CONFIG_FlbbSampling_NUMBER	Specifies whether the Flbb instrument is set to sample. Values: Zero disables sampling and nonzero enables sampling.

Configuration parameters

CONFIG_<short sensor name>BetaWavelength<I>_nm	Wavelength of <short sensor name> Beta #<I> measurements (in nanometer).
CONFIG_<short sensor name>BetaBandwidth<I>_nm	Bandwidth of <short sensor name> Beta #<I> measurements (in nanometer).
CONFIG_Ocr<param>Wavelength<I>_nm	Wavelength of Ocr<param> #<I> measurements (in nanometer).
CONFIG_Ocr<param>Bandwidth<I>_nm	Bandwidth of Ocr <param> #<I> measurements (in nanometer).
CONFIG_<short sensor name><param>FluorescenceExcitationWavelength_nm	Wavelength of <short sensor name> for excitation of <param> fluorescence measurements (in nanometer)
CONFIG_<short sensor name><param>FluorescenceEmissionWavelength_nm	Wavelength of <short sensor name> for emission of <param> fluorescence measurements (in nanometer)
CONFIG_<short sensor name><param>FluorescenceExcitationBandwidth_nm	Bandwidth of <short sensor name> for excitation of <param> fluorescence measurements (in nanometer)
CONFIG_<short sensor name><param>FluorescenceEmissionBandwidth_nm	Bandwidth of <short sensor name> for emission of <param> fluorescence measurements (in nanometer)
CONFIG_CroverBeamAttenuationWavelength_nm	Wavelength of Crover for Beam attenuation measurements (in nanometer)
CONFIG_<short sensor name>BetaAngle_angularDeg	Angle of Beta measurements (in degrees)

Configuration parameters

How do we proceed for our floats (1)

- Perform a dump of the configuration of the float before the deployment
- Send it or make it available to Coriolis
- Store and send all the metadata to Coriolis

The screenshot shows a web browser with two tabs. The active tab is titled 'http://www.oao...rcheFloat2.php' and displays a search interface with three sections: 'Search by mission number' (with 'basbio001d' selected), 'Search by MyFloat' (with 'BLA_SEA_OC_basbio001d' selected), and 'Search by WMOnumber' (with '3901496' selected). The second tab is titled 'http://www.oao...eMission2.php' and displays mission details for 'lovbio008b' on the 'JAMES COOK' platform during 'AMT22' cruise. It includes links for 'Deployment Sheet' and 'Predeployment Configuration Sheet', and lists technical specifications: WMO: 6901440, TYPE: PROVOR2, SN: OIN12RA-S31-06, SIM: 8988169224000733627, and IMEI: 300025010711430. The PI is Herve Claustre and the project is remOcean. Below this is a table of sensor configurations.

SENSOR	MODEL	PARAMETER	SN
SUNA	FW2.2.6	Nitrates	201 config
Optode	DO4330	Dissolved Oxygen	841
CTD	SBE41C	Pressure	3981
CTD	SBE41C	Temperature	3981
CTD	SBE41C	Salinity	3981
CHLA	ECO3	Chlorophyll-A	2444
CDOM	ECO3	CDOM	2444
BACKSCATTERING	ECO3	BACKSCATTERING	2444
Attenuation coef	cROVER	Attenuation coef	42
Radiometer	OCR504	Ed_380	40223
Radiometer	OCR504	Ed_412	40223
Radiometer	OCR504	Ed_490	40223
Radiometer	OCR504	PAR	40223

How do we proceed for our floats (2)

```
http://www.oao....lovbio008b.txt x +
www.oao.obs-vlfr.fr/BD_FLOAT/CONFIGURATION
<PM 26 2000>
<PM 27 0>
<PM 28 1>
<PM 29 4>
<PM 30 1000>
<PM 31 2000>
<PM 32 0>
<PM 33 1>
<PM 34 4>
<PM 35 1000>
<PM 36 2000>
<PM 37 0>
<PM 38 1>
<PM 39 4>
<PM 40 1000>
<PM 41 2000>
<PM 42 0>
<PM 43 1>
<PM 44 4>
<PM 45 1000>
<PM 46 2000>
<PM 47 0>
<PM 48 1>
<PM 49 4>
<PM 50 1000>
<PM 51 2000>
<PM 52 0>
]
?PV
<Parameters loaded>
*****PARAMETRES VECTEUR*****

Nb Durees cycles: 1
Periode fin de vie irridium: 60 min
Attente inter-cycles: 10 min

Duree de cycle No 1: 24 H
Date de fin duree cycle No 1: 31 12 99

<PV 0 1>
<PV 1 60>
<PV 2 10>
<PV 3 24>
<PV 4 31>
<PV 5 12>
<PV 6 99>
<PV 7 24>
<PV 8 31>
```

How do we proceed for our floats (3)

- ⇒ Write documentation to present the calculation of the parameter
- ⇒ Describe the sensor meta data
- ⇒ Present the configuration parameter that are directly related to the parameter

⇒ PROCESSING Bio-Argo chlorophyll-a concentration at the DAC level
Version 1.0
October 2014

⇒

Sensors and measurements method	
SENSOR	FLUOROMETER_CHLA
SENSOR MAKER	WET labs
SENSOR_MODEL	ECO
SENSOR_SERIAL_NUMBER	To be filled
SENSOR_UNITS	Counts
SENSOR_ACCURACY	0.08 mg/m ³ *
SENSOR_RESOLUTION	0.025 mg/m ³

- ⇒
- CONFIG_EcoChlaFluorescenceExcitationWavelength_nm
Wavelength of <short sensor name> for excitation of <param> fluorescence measurements (in nanometer)

How do we proceed for our floats (4)

- ⇒ Explain in the file what will be in the B file and in the merged file
- ⇒ Same procedure for BBP
- ⇒ Same procedure for Radiometric data

What is in the B file (intermediate:i) ?

PARAMETER="FLUORESCENCE_CHLA"

What is in the merged file (b) ?

PARAMETER="CHLA"

PREDEPLOYMENT_CALIB_EQUATION="CHLA=(FLUORESCENCE_CHLA -DARK_CHLA)*SCALE_CHLA"

PREDEPLOYMENT_CALIB_COEFFICIENT="DARK_CHLA=71 , SCALE_CHLA=0.008"

PREDEPLOYMENT_CALIB_COMMENT=""