Gosud : Data management

GOSUD Data Management
April 2008
08-064

GOSUD: User's Manual (proposition for a new format)

Version 1.41

GOSUD
User's Manual
Ref : cordo/mut/08-064
Version : 1.41
Date : 25th April 2008
Authors :

GOSUD data management team

Table of content

History

This document is a proposition for a new GOSUD format. It will be revised at the GOSUD meeting (Seattle 2008 june 10-11-12).

Version	Date	Comment
1.0	09/11/2005	F. Gaillard/L. Petit de la Villéon creation of the document based on GOSUD data management user's manual (T. Carval)
1.1	29/11/2005	F. Gaillard /L. Petit de la Villéon: revision after ORE-SSS technical meeting
1.2	01/12/2005	T. Carval : parameter naming conventions : <PARAM>_XXX where XXX = TSG, WS, TINT
1.3	17/01/2006	F. Gaillard, D. Mathias, correction after producing the 2000-2004 files.
1.4	07/05/2008	C. Lagadec, J.Grelet, F. Gaillard : integration in processing CORIOLIS/IRD
1.41	26/05/2008	L.Petit de la Villéon : Data Acccess paragraph

1. Overview of the format

This document aims at defining a common format for thermo-salinometer (TSG) data. This format is meant for the data exchange and processing. It should hold both real time and delayed mode data and various levels of resolution or processing.

The data sets found in the file are:

- General information on the file, the platform and the TSG installation
- Data series from the main TSG

And, whenever available:

- Data series from the Temperature sensor at water intake
- Data from salinity sample analysis

In the case of real time data, some variables may be missing. The file is updated as new data and information come in.

For delayed mode use, the data center is expected to provide a file that corresponds to a unique installation period of a thermo-salinometer on one ship. All available information must have been entered, in particular those referring to the calibration and water sample analysis. The group in charge of the validation will complement the file with the 'corrected' data series.

2. Description of the thermosalinometer format

2.1. Data file dimensions

Name	Definition	Comment
DAYD		Number of recorded measurements for the main TSG series
DAYD_WS		Number of recorded measurements for water samples
DAYD_EXT		Number of recorded measurements for external data
NCOEF_CAL	NCOEF_CAL = 5	Number of calibration coefficients
NCOEF_LIN	NCOEF_LIN = 2	Number of drift correction coefficients (linear)
STRING256 STRING14 STRING4	STRING256 = 256; STRING14 = 14; STRING4 = 4;	String dimensions.
N1	N1 = 1;	

2.2. Global attributes: meta-data

Name	Definition	Comment
CYCLE_MESURE	CYCLE_MESURE = <char value>;	Cruise name or travel number Example : EGEE6 or PAST0601
PROJECT_NAME	PROJECT_NAME = <char value>;	Name of the project which operates the TSG line. Example : ORE-SSS
PLATFORM_NAME	PLATFORM_NAME = <char value>;	Ship name Example : Pourquoi Pas ?
SHIP_CALL_SIGN	SHIP_CALL_SIGN = <char value>;	Ship call sign . Example : FABB
SHIP_MMSI		Ship MMSI (ASN) number Example :
DATE_TSG	DATE_TSG = <char value>;	Date of TSG installation : YYYYMMDDHHMISS
TYPE_TSG		Described in reference table 1 Example : SBE21
NUMBER_TSG	NUMBER_TSG= <char value>;	(serial number, ex: 2250)
DATE_TINT	DATE_TINT = <char value>	Date of TINT installation
TYPE_TINT	TYPE_TINT= <char value>;	Temperature sensor at intake. Described in reference table 2 Ex: SBE3
NUMBER_TINT	NUMBER_TINT= <char value>;	(serial number, ex: ????)
DATA_TYPE	DATA_TYPE = <char value>;	This field describes the type of data contained in the file. Example : TRAJECTORY, PROFIL or TIME_SERIE
DATA_MODE	DATA_MODE = <char value>;	Indicates if the file contains real time or delayed mode data. R : real time data D : delayed mode data
SAMPLING_PERIOD	SAMPLING_PERIOD = <char value>;	Sampling period in seconds: 6 to 3600
DATE_START	DATE_START = <char value>;	Date of first measurements : YYYYMMDDHHMISS
DATE_END	DATE_END = <char value>	Date of last measurements : YYYYMMDDHHMISS
SOUTH_LATX		South limit of measurements
NORTH_LATX		North limit of measurements
WEST_LONX		West limit of measurements
EAST_LONX		East limit of measurements
FORMAT_VERSION	FORMAT_VERSION = <char value>;	File format version : 1.4 for this format
DATE_CREATION	DATE_CREATION = <char value>;	Date and time (UTC) of creation of this file. Format : YYYYMMDDHHMISS Example : 20011229161700 : December 29th 2001 16:17:00
DATE_UPDATE (optional)	DATE_UPDATE = <char value>;	Date and time (UTC) of update of this file. Format : YYYYMMDDHHMISS Example : 20011230161700 : December 30th 2001 16:17:00
DATA_RESTRICTIONS	DATA_RESTRICTIONS = <char value>;	Restriction on use for these data. Example : "NONE"
CITATION	CITATION = <char value>;	The citation should be used for publications. Example : "These data were collected and made freely available by the International Gosud Project and the national programmes that contribute to it."
COMMENT	COMMENT = <char value>;	
PI_NAME	PI_NAME = <char value>;	Name of the principal investigator in charge of the TSG line. Example : GENAVIR
DATA_CENTRE	DATA_CENTRE = <char value>;	Code for the data centre (2 char) The data centre codes are described in the reference table 3 Example :
DATA_ACQUISITION	DATA_ACQUISITION = <char value>;	Acquisition data centre Example : SHOM, IRD, GENAVIR, CNRS ...
PROCESSING_CENTRE	PROCESSING_CENTRE = <char value>;	Processing data centre Example : ORE-SSS, CORIOLIS/IRD, CORIOLIS/SISMER
PROCESSING_STATES	PROCESSING_STATES = <char value>;	Described in reference table 3

WS_TYPE	WS _TYPE = <char value>	**Model of water sample bottle** **Default : NA** **Example: OSIL** Described in reference table 6

2.3. Measurements

2.3.1. Variables describing installation of TSG

Name	Definition	Comment
SSPS_DEPH	float SSPS_DEPH (1); SSPS_DEPH:long_name = "Nominal depth of water intake for salinity measurement"; DEPTH :units = "meter"; SSPS_DEPH :_FillValue = 99999.f; SSPS_DEPH :valid_min = 0.f; SSPS_DEPH :valid_max = 100.f;	Ex: SSPS_DEPH = 8
SSPS_DEPH_MIN	float SSPS_DEPH_MIN (1); SSPS_DEPH_MIN:long_name = "Minimum depth of water intake"; SSPS_DEPH_MIN :units = "meter"; SSPS_DEPH_MIN :_FillValue = 99999.f; SSPS_DEPH_MIN :valid_min = 0.f; SSPS_DEPH_MIN:valid_max = 100.f;	Ex: 6
SSPS_DEPH_MAX	float SSPS_DEPH_MAX (1); SSPS_DEPH_MAX:long_name = "Maximum depth of water intake"; SSPS_DEPH_MAX :units = "meter"; SSPS_DEPH_MAX :_FillValue = 99999.f; SSPS_DEPH_MAX :valid_min = 0.f; SSPS_DEPH_MAX :valid_max = 100.f;	Ex: 10
CNDC_CALCOEF	double CNDC_TSG_CALCOEF(NCOEF_CAL); CNDC_TSG_CALCOEF:long_name = "Conductivity calibration coefficients"; CNDC_TSG_CALCOEF:convention = "ex: ‘a’, ‘b’, ‘c’, ‘d’, ‘m’ "; CNDC_TSG_CALCOEF:date = “ex: 20011011 “ CNDC_TSG_CALCOEF :_FillValue = 99999.f;	
CNDC_LINCOEF	double CNDC_TSG_LINCOEF(NCOEF_LIN); CNDC_TSG_LINCOEF:long_name = "Conductivity linear drift correction coefficients"; CNDC_TSG_LINCOEF:convention = "ex: ‘slope’, ‘offset’"; CNDC_TSG_LINCOEF:date = “ex: 20011011 “ CNDC_TSG_LINCOEF :_FillValue = 99999.f;	
SSJT_CALCOEF	double SSJT_CALCOEF(NCOEF_CAL); SSJT_CALCOEF:long_name = "Temperature calibration coefficients"; SSJT_CALCOEF:convention = "ex: ‘a’, ‘b’, ‘c’, ‘d’, ‘f0’ "; SSJT_CALCOEF:date = “ex: 20011011 “ SSJT_CALCOEF :_FillValue = 99999.f;	
SSJT_LINCOEF	double SSJT_LINCOEF(NCOEF_LIN); SSJT_LINCOEF:long_name = "Temperature linear drift correction coefficients"; SSJT_LINCOEF:convention = "ex: ‘slope’, ‘offset’"; SSJT_LINCOEF:date = “ex: 20011011 “ SSJT_LINCOEF :_FillValue = 99999.f;	

2.3.2. Variables describing installation of Temperature sensor at intake (TINT)

Name	Definition	Comment
SSTP_DEPH	float SSTP_DEPH (1); SSTP_DEPH:long_name = "Nominal depth of water intake for Temperature measurement"; SSTP_DEPH :units = "meter"; SSTP_DEPH :_FillValue = 99999.f; SSTP_DEPH :valid_min = 0.f; SSTP_DEPH :valid_max = 100.f;	Ex: SSTP_DEPH = 8
SSTP_DEPH_MIN	float SSTP_DEPH_MIN (1); SSTP_DEPH_MIN:long_name = "Minimum depth of water intake"; SSTP_DEPH_MIN :units = "meter"; SSTP_DEPH_MIN :_FillValue = 99999.f; SSTP_DEPH_MIN :valid_min = 0.f; SSTP_DEPH_MIN:valid_max = 100.f;	Ex: 6
SSTP_DEPH_MAX	float SSTP_DEPH_MAX (1); SSTP_DEPH_MAX:long_name = "Maximum depth of water intake"; SSTP_DEPH_MAX :units = "meter"; SSTP_DEPH_MAX :_FillValue = 99999.f; SSTP_DEPH_MAX :valid_min = 0.f; SSTP_DEPH_MAX :valid_max = 100.f;	Ex: 10
SSTP_CALCOEF	double SSTP_CALCOEF(NCOEF_CAL); SSTP_CALCOEF:long_name = "Temperature calibration coefficients"; SSTP_CALCOEF:convention = "ex: ‘a’, ‘b’, ‘c’, ‘d’, ‘f0’ "; SSTP_CALCOEF:date = “ex: 20011011 “ SSTP_CALCOEF :_FillValue = 99999.f;	
SSTP_LINCOEF	double SSTP_LINCOEF(NCOEF_LIN); SSTP_LINCOEF:long_name = "Temperature linear drift correction coefficients"; SSTP_LINCOEF:convention = "ex: ‘a’, ‘b’"; SSTP_LINCOEF:date = “ex: 20011011 “ SSTP_LINCOEF :_FillValue = 99999.f;	

2.3.3. Coordinates for TSG/TINT:

Name	Definition	Comment
DATE	char DATE (DAYD,STRING14); DATE:long.name = “Date of main instrument measurements” INST_REFERENCE:conventions = “yyyymmddhhmmss”	This is the original data describing the date, it must not be lost
DAYD	double DAYD(DAYD); DAYD:long_name = "Julian day (UTC) of each measurement"; DAYD:standard_name = "time"; DAYD:units = "days since 1950-01-01 00:00:00 UTC"; DAYD:conventions = "Relative julian days with decimal part (as parts of the day)"; DAYD:axis = "t"; DAYD:_FillValue = 99999.; DAYD:epic_code = 601.;	Julian day of the measurement. The integer part represents the day, the decimal part represents the time of the measurement. Date and time are in universal time coordinate. Example : 18833.8013889885 : July 25 2001 19:14:00
LATX	float LATX(DAYD); LATX:long_name = "Latitude of each measurement"; LATX:standard_name = "Latitude"; LATX:units = "degree_north (decimal)"; LATX:_FillValue = 99999.f; LATX:valid_min = -90.f; LATX:valid_max = 90.f; LATX:epic_code = 500;	LATX of the measurement. Unit : degree north Example : 44.4991 for 44° 29’ 56.76’’ N
LONX	float LONX (DAYD); LONX:long_name = "Longitude of each measurement"; LONX:standard_name = "Longitude"; LONX:units = "degree_east (decimal)"; LONX:_FillValue = 99999.f; LONX:valid_min = -180.f; LONX:valid_max = 180.f; LONX:epic_code = 501;	LONX of the measurement. Unit : degree east Example : 16.7222 for 16° 43’ 19.92’’ E
POSITION_QC	byte POSITION_QC(DAYD) POSITION_QC:long_name=quality flag of position TSG POSITION_QC:standard_name = "Position quality"; POSITION_QC:missing_value=”0”;	
SPDC	float SPDC (DAYD); <PARAM>:long_name = "<Ship speed computed from navigation>"; <PARAM>:units = "<knots>"; <PARAM>:standard_name=”speed” <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <50>; <PARAM>:comment = "<Ship speed from GPS (SOG). If SOG not available, derived from last position>"; <PARAM>:resolution = <>	
REFERENCE_DATE_TIME	char REFERENCE_DATE_TIME(STRING14) REFERENCE_DATE_TIME:comment=”Date of reference for Julian days” REFERENCE_DATE_TIME:conventions=”YYYYMMDDHHMISS” REFERENCE_DATE_TIME:_FillValue=” ”;	Date of reference for julian days The recommended reference data time is “19500101000000” : January 1st 1950 00:00:00

2.3.4. Data series 1 main TSG:

1) Measured variables

Name	Definition	Comment
PRES (optional)	float PRES (DAYD); <PARAM>:long_name = "<Sea pressure in TSG>"; <PARAM>:units = "<decibar>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <10>; <PARAM>:comment = "<Sea pressure inside TSG, this is an indication that pump is working properly>"; <PARAM>:resolution = <0.1>	Sea pressure in TSG This is an indication that pump is functioning properly
CNDC	float CNDC (DAYD); <PARAM>:long_name = "<Electrical conductivity>"; <PARAM>:units = "<S/m>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <7>; <PARAM>:comment = "<>"; <PARAM>:resolution = <0.001>	Electrical conductivity This data may have been reduced With a median (recommended) or a mean
CNDC_STD (optional)	float CNDC_STD(DAYD); <PARAM>:long_name = "<Conductivity standard deviation>"; <PARAM>:units = "<S/m>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = 0; <PARAM>:valid_max = <7>; <PARAM>:comment = "<Standard deviation of conductivity measured by TSG(CNDC)>";	CNDC, standard deviation for data which have been reduced (with a mean or median)
CNDC_CAL (optional)	float CNDC_CAL(DAYD); <PARAM>:long_name = "<Conductivity in TSG – calibrated >"; <PARAM>:units = "<S/m >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <7>; <PARAM>:comment = "< Conductivity, calibrated using linearization coefficients>";	Conductivity, calibrated using linearization coefficients
CNDC_FREQ (optional)	float CNDC_FREQ(DAYD); <PARAM>:long_name = "<Sensor Conductivity Frequency>"; <PARAM>:standard_name = “<Frequency>”; <PARAM>:units = "<Hz >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <20000>; <PARAM>:comment = "< Sensor Conductivity frequency measured by TSG>";	Sensor Conductivity Frequency
SSJT	float SSJT(DAYD); <PARAM>:long_name = "<Temperature within TSG>"; <PARAM>:units = "<degrees Celsius >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "< Temperature within TSG or ‘Jacket Temperature’.>"; <PARAM>:resolution = <>	Temperature within TSG or ‘Jacket Temperature’. Warning: this is not the ocean Temperature It is used to obtain salinity from the conductivity The reduction applied is the same as for conductivity Temperature scale must be specified (T64 or T90)

SSJT_STD (optional)	float SSJT_STD(DAYD); <PARAM>:long_name = "<Temperature standard deviation>"; <PARAM>:units = "<Celsius degree >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = -1.5; <PARAM>:valid_max = <38>; <PARAM>:comment = "< Water jacketTemperature standard deviation inside TSG for data which have been reduced (with a mean or median) >";	Water jacketTemperature standard deviation inside TSG for data which have been reduced (with a mean or median)
SSJT_CAL (optional)	float SSJT_CAL(DAYD); <PARAM>:long_name = "< Water jacket Temperature inside TSG – calibrated >"; <PARAM>:units = "<degrees Celsius >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "< water jacket Temperature inside TSG, calibrated using linearization coefficients>";	Water jacket Temperature inside TSG, calibrated using linearization coefficients
SSJT_FREQ (optional)	float SSJT_FREQ(DAYD); <PARAM>:long_name = "<Water Jacket Sensor Temperature Frequency>"; <PARAM>:standard_name = “<Frequency>”; <PARAM>:units = "<Hz >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <20000>; <PARAM>:comment = "< Sensor temperature frequency measured by TSG>";	
SSJT_ADJUSTED (optional)	float SSJT_ADJUSTED(DAYD); <PARAM>:long_name = "<Ocean Temperature in TSG adjusted>"; <PARAM>:units = "< deg. Celsius – T90>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "<Y>";	
SSJT_ADJUSTED_ERROR (optional)	float SSJT_ERR(DAYD); <PARAM>:long_name = "<Error on adjusted water jacket Temperature in TSG>"; <PARAM>:units = "< deg. Celsius >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "< Error on adjusted water jacket Temperature with external data (CTD, XBT, ARGO …)>";	Error on adjusted water jacket Temperature with external data (CTD, XBT, ARGO …)
SSJT_ADJUSTED_QC (optional)	byte SSTP_ADJUSTED_QC(DAYD); <PARAM>_ADJUSTED_QC:long_name = "quality flag"; <PARAM>_ADJUSTED_QC:conventions = "GOSUD ref. table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied on adjusted temperature values. The flag scale is specified in table 4.
SSJT_ADJUSTED_HIST (optional)	Char SSJT_ADJUSTED_HIST(STRING256)	Adjusted Temperature processing history

2) Ocean salinity deduced from SSJT and CNDC_TSG

SSPS	float SSPS(DAYD); <PARAM>:long_name = "<Sea surface practical Salinity (SSTP,CNDC)>"; <PARAM>:units = "<PSU – Sal 78 >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <40>; <PARAM>:comment = "< Sea surface practiicall salinity deduced from conductivity and jacket Temperature>";	Sea surface practical salinity deduced from conductivity and water jacket Temperature.
SSPS_QC	byte SSPS_QC(DAYD); <PARAM>_QC:long_name = "quality flag"; <PARAM>_QC:conventions = "GOSUD ref. table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied on sea surface practical salinity values. The flag scale is specified in table 4.
SSPS_CAL (optional)	float SSPS(DAYD); <PARAM>:long_name = "<Sea Surface Salinity Calibrated (SSTP_CAL,CNDC_CAL)>"; <PARAM>:units = "<PSU – Sal 78 >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <40>; <PARAM>:comment = "<>";	
SSPS_ADJUSTED (optional)	float SSPS_ADJUSTED(DAYD); <PARAM>:long_name = "<Sea Surface Practical Salinity adjusted>"; <PARAM>:units = "< PSU – Sal 78>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <40>; <PARAM>:comment = "<>";	
SSPS_ADJUSTED_ERRO R (optional)	float SSPS_ADJUSTED_ERR(DAYD); <PARAM>:long_name = "<Error on Sea Surface Practical Salinity adjusted>"; <PARAM>:units = "< PSU – Sal 78>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <40>; <PARAM>:comment = "<>";	
SSPS_ADJUSTED_QC	byte SSPS_ADJUSTED_QC(DAYD); <PARAM>_ADJUSTED_QC:long_name = "quality flag"; <PARAM>_ADJUSTED_QC:conventions = "GOSUD ref. table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied on sea surface practical salinity adjusted values. The flag scale is specified in table 4.
SSPS_ADJUSTED_HIST	Char SSPS_ADJUSTED_HIST(STRING256)	Sea Surface Practical Adjusted Salinity processing history

2.3.5. Data series 2: ocean Temperature from the water intake

Name	Definition	Comment
SSTP (optional)	float SSTP(DAYD); <PARAM>:long_name = "<Sea Surface Temperature>"; <PARAM>:units = "<deg. Celsius – T90>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "< Sea Surface Temperature measured at intake with Instrument (TINT_TYPE, TINT_NUMBER) This is the ocean Temperature >"; <PARAM>:resolution = <0.001>	Sea Surface Temperature measured at intake with Instrument (TINT_TYPE, TINT_NUMBER) This is the ocean Temperature.
SSTP_QC (optional)	byte SSTP_QC(TIME,); <PARAM>_QC:long_name = "quality flag"; <PARAM>_QC:conventions = "GOSUD ref. table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied on SSTP values. The flag scale is specified in table 4.
SSTP_CAL (optional)	float SSTP_CAL(DAYD); <PARAM>:long_name = "<Sea Surface Temperature Calibrated>"; <PARAM>:units = "< deg. Celsius – T90 >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "<>";	Sea Surface Temperature Calibrated
SSTP_FREQ (optional)	float SSTP_FREQ(DAYD); <PARAM>:long_name = "<Sea Surface Temperature Frequency>"; <PARAM>:standard_name = “<Temperature frequency in TSG>"; <PARAM>:units = "<Hz >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <20000>; <PARAM>:comment = "< Frequency of external temperature sensor, used for SST measurement>";	Frequency of external temperature sensor, used for SST measurement
SSTP_ADJUSTED (optional)	float SSTP_ADJUSTED(DAYD); <PARAM>:long_name = "<Adjusted Sea Surface Temperature adjusted>"; <PARAM>:units = "< deg. Celsius – T90>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "<>";	Adjusted Sea Surface Temperature
SSTP_ADJUSTED_ERROR (optional)	float SSTP_ERR(DAYD); <PARAM>:long_name = "<Error on adjusted Sea Surface Temperature>"; <PARAM>:units = "< deg. Celsius – T90>"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <-1.5>; <PARAM>:valid_max = <38>; <PARAM>:comment = "<>";	Error on adjusted Sea Surface Temperature
SSTP_ADJUSTED_QC (optional)	byte SSTP_ADJUSTED_QC(DAYD); <PARAM>_ADJUSTED_QC:long_name = "quality flag"; <PARAM>_ADJUSTED_QC:conventions = "GOSUD ref. table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied on adjusted temperature values. The flag scale is specified in table 4.
SSTP_ADJUSTED_HIST	Char SSTP_ADJUSTED_HIST(STRING256)	Adjusted Temperature processing history

2.3.6. Data series 3 : external data

Name	Definition	Comment
DATE_EXT	char DATE (DAYD_EXT,STRING14); DATE_EXT:long.name = “Date/time of water sample” DATE_EXT:conventions = “yyyymmddhhmmss”	This is the original data describing the date, it must not be lost
DAYD_EXT	double DAYD_EXT(DAYD_EXT); DAYD_EXT:long_name = "Julian day (UTC) of each measurement"; DAYD_EXT:standard_name = "time"; DAYD_EXT:units = "days since 1950-01-01 00:00:00 UTC"; DAYD_EXT:conventions = "Relative julian days with decimal part (as parts of the day)"; DAYD_EXT:axis = "t"; DAYD_EXT:_FillValue = 999999.; DAYD_EXT:epic_code = 601.;	Julian day of the measurement. The integer part represents the day, the decimal part represents the time of the measurement. Date and time are in universal time coordinate. Example : 18833.8013889885 : July 25 2001 19:14:00
LATX_EXT	float LATX_EXT(DAYD_WS); LATX_EXT:long_name = "LATX samples"; LATX_EXT:standard_name = "LATX"; LATX_EXT:units = "degree_north"; LATX_EXT:_FillValue = 99999.f; LATX_EXT:valid_min = -90.f; LATX_EXT:valid_max = 90.f; LATX_EXT:epic_code = 500;	LATX of the measurement. Unit : degree north Example : 44.4991 for 44° 29’ 56.76’’ N
LONX_EXT	float LONX_EXT(DAYD_EXT); LONX_EXT:long_name = "LONX samples"; LONX_EXT:standard_name = "LONX"; LONX_EXT:units = "degree_east"; LONX_EXT:_FillValue = 99999.f; LONX_EXT:valid_min = -180.f; LONX_EXT:valid_max = 180.f; LONX_EXT:epic_code = 501;	LONX of the measurement. Unit : degree east Example : 16.7222 for 16° 43’ 19.92’’ E
SSTP_EXT	float SSTP_EXT (DAYD_EXT); <PARAM>_EXT:long_name = "<Temperature from water samples>"; <PARAM>_EXT:units = "<degrees Celsius >"; <PARAM>:_FillValue = <X>; <PARAM>:valid_min = <Y>; <PARAM>:valid_max = <Y>; <PARAM>:comment = "<Y>"; <PARAM>:resolution = <>	PARAM = SSTP_EXT,
SSTP_EXT_QC	byte SSTP_EXT_QC(DAYD_EXT); <PARAM>_EXT_QC:long_name = "quality flag"; <PARAM>_EXT_QC:conventions = " "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied temperature values. The flag scale is specified in table 4.
SSTP_EXT_TYPE	Char:SSPS_EXT_TYPE(STRING4) <SSPS_EXT_TYPE>:long_name = “Type of external data origin”	Example :ARGO, CTD, XBT
SSPS_EXT	float SSPS_EXT (DAYD_EXT); <PARAM>_EXT:long_name = "<Sea Surface Salinity from external instrument>"; <PARAM>_EXT:units = "<PSU – Sal 78 >"; <PARAM>:_FillValue = <99999>; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <40>; <PARAM>:comment = "<>"; <PARAM>:resolution = <0.001>	PARAM = SSPS_EXT,
SSPS_EXT_QC	byte SSPS_EXT_QC(DAYD_EXT); <PARAM>_EXT_QC:long_name = "quality flag"; <PARAM>_EXT_QC:conventions = "GOSUD table "; <PARAM>:valid_min = <0>; <PARAM>:valid_max = <9>; <PARAM>_QC:_missing_value = 0;	Quality flag applied salinity values. The flag scale is specified in table 4.
SSPS_EXT_TYPE	Char:SSPS_EXT_TYPE(DAYD_EXT,STRING4) <SSPS_EXT_TYPE>:long_name = “Type of external data origin”	Example :WS, ARGO, CTD, XBT

SSPS_EXT_ANALDATE	char SSPS_EXT_ANALDATE(DAYD_EXT,STRING14); SSPS_EXT_ANALDATE:long_name = "<Date of water sample surface salinity analysis >"; SSPS_WS_ANALDATE:conventions = "yyyymmddhhmiss"	
SSPS_EXT_BOTTLE	char SSPS_EXT_BOTTLE(DAYD_EXT,STRING4); SSPS_EXT_BOTTLE:long_name = "Sea Surface Practical salinity Bottle number"> <SSPS_EXT_BOTTLE>:_FillValue = <0>;	Example; 0001 or B12

3. Reference tables

3.1. Reference table 1 : Thermosalinometer (TSG) type

Name
SBE21
SBE45
UNKNO

3.2. Reference table 2 : Temperature sensor at intake (TINT) type

Name
SBE38
SBE3S
TQP
UNKNO
NA

3.3. Reference table 3 : PROCESSING STATES

Code	Libellé
0A	RAW DATA
0B	NOT RECOMMEND
0C	NOT RECOMMEND
1A	DATA LOCATED
1B	NOT RECOMMEND
1C	NOT RECOMMEND
2A	NOT RECOMMEND
2B	APPLICATION . D'UN CODE DE QUALITE AUTOMATIQUE
2B+	APPLICATION D'UN CODE DE QUALITE APRES INSPECTION VISUELLE
2C	DONNEES VALIDEES PAR LE PI
2C+	CONTROLE CLIMATOLOGIQUE
3A	NON RECOMMANDE
3B	DONNEE REDUITE CALIBREE
3C	DONNEE REDUITE GRILLEE

3.4. Reference table 4 : QUALITY FLAGS

n	Meaning
0	No QC was performed
1	Good data
2	Probably good date
3	Bad data that are potentially correctable
4	Bad data
5	Value changed
6	Not used
7	Not used
8	Interpolated value
9	Missing value

3.5. Reference table 5 : Parameter code table

Code	Parameter Long name	Unit	Valid min	Valid max	Fortran Format resolution	Fill value
LATX	Latitude	Decimal degree	-90	90	%+8.41f	99999
LONX	Longitude	Decimal degree	-180	180	%+9.41f	99999
DAYD	Decimal Julian day time	Decimal day	0.0	3660.0	%9.51f	99999
SPDC	Ship speed computed from navigation	Meter/second	0	90	%6.31f	99999
PRES	Sea pressure	decibar	0	6500	%6.11f	99999
DEPH	Depth below sea surface	meter	0	6000	%6.11f	99999
PSAL	Practical salinity	PSU	33	37	%6.31f	99999
CNDC	Electrical conductivity	S/m	3	7	%5.31f	99999
SSJT	Sea surface water	Celsius	-1.5	38	%6.31f	99999

	jacket temperature	degree				
SSPS	Sea surface practical salinity	PSU			%6.31f	99999
SSTP	Sea surface temperature	Celsius degree	-1.5	38	%6.31f	99999

3.6. Reference table 6 : Water sample (bottle) type

Name
OSIL
UNKNO
NA

4. Data access

Gosud data are available from GDACs (Global Data Assembly Centers).

FTP data access :

- ftp://ftp.nodc.noaa.gov/pub/data.nodc/iode/gosud
- ftp://ftp.ifremer.fr/ifremer/gosud

OpenDAP data access :

- http://data.nodc.noaa.gov/cgi-bin/nph-dods/iode/gosud
- http://www.ifremer.fr/cgi-bin/nph-dods/data/in-situ/gosud

Web data access :

- http://www.ifremer.fr/sismer/program/gosud/gdac.htm
- http://www.ifremer.fr/sismer/program/gosud/cdc/gosud_web_data_access.htm