Sample Trajectory 3.2 files.

This note explains what has been done to generate the first samples of Traj 3.2 (‘c’ and ‘b’ combined version of trajectory files).

Note that not all needed implementations have been completed (see below).

Traj 3.2 files have been generated for the following float types and versions.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| WMO | Type | Coriolis version | Transmission | Sensors | Comment |
| 6901585 | CTS4 (Remocean) | 5.92 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  FLUOROMETER\_CDOM  TRANSMISSOMETER\_CP660 | CHLA RT adjustment (not reported in sample file) |
| 6902740 | CTS4 (Remocean) | 5.92 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  FLUOROMETER\_CDOM | CHLA RT adjustment (not reported in sample file) |
| 3901497 | CTS4 (Remocean) | 6.01 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  BACKSCATTERINGMETER\_BBP532 | PSAL RT adjustment (not reported in sample file)  CHLA RT adjustment (not reported in sample file) |
| 3902120 | CTS4 (AtlantOS) | 6.11 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  FLUOROMETER\_CDOM  SPECTROPHOTOMETER\_NITRATE | N\_VALUES41  CHLA RT adjustment (**reported in sample file**)  NITRATE RT adjustment (not reported in sample file) |
| 3902122 | CTS4 (AtlantOS) | 6.11 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  FLUOROMETER\_CDOM  SPECTROPHOTOMETER\_NITRATE | N\_VALUES41  DOXY RT adjustment (**reported in sample file**)  CHLA RT adjustment (**reported in sample file**)  NITRATE RT adjustment (not reported in sample file) |
| 2902093 | CTS4 (Incois) | 5.8 | Ir SBD | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700 | CHLA RT adjustment (not reported in sample file) |
| 6901030 | CTS3 | 4.42 | Argos | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY |  |
| 6902807 | CTS3 | 5.75 | Ir SBD | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY |  |
| 1901361 | Apex | 032213 | Argos | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY | PSAL RT adjustment (not reported in sample file) |
| 3901065 | Apex | 082807 | Argos | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_TURBIDITY | CHLA RT adjustment(not reported in sample file) |
| 6903554 | Apex APF11 | 2.11.1.S & 2.11.3.S | Ir SBD | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  RADIOMETER\_DOWN\_IRR380  RADIOMETER\_DOWN\_IRR412  RADIOMETER\_DOWN\_IRR490  RADIOMETER\_PAR  FLUOROMETER\_CHLA  BACKSCATTERINGMETER\_BBP700  FLUOROMETER\_CDOM | CHLA RT adjustment (not reported in sample file) |
| 6900890 | NAVIS\_A | 061113 | Ir RUDICS | CTD\_PRES  CTD\_TEMP  CTD\_CNDC  OPTODE\_DOXY  OPTODE\_DOXY2 | PSAL RT adjustment (not reported in sample file) |

The main changes between ‘c’ Traj 3.1 and Traj 3.2 files are the followings.

|  |  |  |
| --- | --- | --- |
| Traj 3.2 file | Traj 3.1 ‘c’ file | Comment |
| STRING256 |  | For TRAJECTORY\_PARAMETER\_CALIB\_\* |
| N\_CALIB |  | For PARAMETER and TRAJECTORY\_PARAMETER\_CALIB\_\* |
| N\_VALUESx |  | If needed by ‘i’ or ‘b’ parameters (such as UV\_INTENSITY\_NITRATE) |
| DATA\_TYPE(STRING32) | DATA\_TYPE(STRING16) |  |
| TRAJECTORY\_PARAMETERS(N\_PARAM, STRING64) | TRAJECTORY\_PARAMETERS(N\_PARAM, STRING16) |  |
| TRAJECTORY\_PARAMETER\_DATA\_MODE(N\_MEASUREMENT, N\_PARAM) |  |  |
| ‘i’ and ‘b’ parameters |  |  |
| <PARAM>\_MED and <PARAM>\_STD variables |  | Additional statistical information on averaged profile values provided by CTS4 floats. |
| PARAMETER(N\_CALIB, N\_PARAM, STRING64) |  |  |
| TRAJECTORY\_PARAMETER\_CALIB\_EQUATION(N\_CALIB, N\_PARAM, STRING256) |  |  |
| TRAJECTORY\_PARAMETER\_CALIB\_COEFFICIENT(N\_CALIB, N\_PARAM, STRING256) |  |  |
| TRAJECTORY\_PARAMETER\_CALIB\_COMMENT(N\_CALIB, N\_PARAM, STRING256) |  |  |
| TRAJECTORY\_PARAMETER\_CALIB\_DATE(N\_CALIB, N\_PARAM, DATE\_TIME) |  |  |
| HISTORY\_PARAMETER(N\_HISTORY, STRING64) | HISTORY\_PARAMETER(N\_HISTORY, STRING16) |  |
| Conventions = "Argo-3.2 CF-1.6" | Conventions = "Argo-3.1 CF-1.6" |  |

Note that:

1. No real time adjusted values <PARAM>\_ADJUSTED for ‘b’ parameters have been filled **except for 3902120 and 3902122 files for which correct DOXY and CHLA adjusted values have been set** (updating some of these adjustments will need further implementations in many parts of the decoder and specifications in the cookbooks).
2. The PARAMETER and TRAJECTORY\_PARAMETER\_CALIB\_\* variables have been added but are not filled in these files (specifications are required).

Additional thoughts:

1. As there is no PARAMETER\_DATA\_MODE in the core PROF files, we should consider to duplicate DATA\_MODE of the core PROF file to set the TRAJECTORY\_PARAMETER\_DATA\_MODE of PRES, TEMP and PSAL parameters (for relevant MCs, i.e. those which refer to profile measurements (i.e. 190, 301, 503 and 590 in Coriolis Traj files)).
2. The JULD data mode should be provided explicitly. This could be done by:
   1. Adding JULD to TRAJECTORY\_PARAMETERS (so that JULD data mode can be stored in TRAJECTORY\_PARAMETER\_DATA\_MODE); or
   2. Adding a JULD\_DATA\_MODE (*this is the best choice for me*).
3. What should be the JULD data mode of an estimated time? (for which JULD = FillValue and JULD\_ADJUSTED ~= FillValue).