SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

ODVSDN2CFPOINT 1.0.3

USER MANUAL

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SEVENTH FRAMEWORK PROGRAMME

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Deliverable number	Short Title
	OdvSDN2CFPOINTUser Manual
Long title	
User Manual of OdvSDN2CFPOINT	
Short description	
User Manual of OdvSDN2CFPOINT software delivered in the frame of SeaDataNet European project. This software is used to convertSeaDataNet ODV files of vertical profiles, time-series and trajectories to SeaDataNetNetCDF (CFPoint)	
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History

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1. Introduction

The CF metadata conventions (http://cf-pcmdi.llnl.gov/) are designed to promote the processing and sharing of files created with the NetCDF API. The conventions define metadata that provide a definitive description of what the data in each variable represents, and the spatial and temporal properties of the data. This enables users of data from different sources to decide which quantities are comparable, and facilitates building applications with powerful extraction, regridding, and display capabilities.

The approach taken with the development of the SeaDataNet profile based on CF 1.6 was to classify data on the basis of feature types and produce a SeaDataNet specification for storage of each of the following:

- Profile (x, y, t fixed; z variable). The specification given is for storage of a single profile such as a CTD cast or bottle profile. However, the design is such that very little change is required to facilitate the storage of multiple profiles in a single netCDF file.
- TimeSeries (x, y, z fixed; t variable). The specification given is for storage of a single time series, such as a current meter record. However, the design is such that very little change is required to facilitate the storage of multiple time series in a single netCDF file.
- Trajectory (x, y, z, t all variable). The specification given is for storage of a single trajectory, but this may be easily modified to store several trajectories in a single file.

The specification was then developed through discussions on a collaborative e-mail list involving participants in SeaDataNet, MyOcean, USNODC, NCAR and AODN. The working objective focussed on producing profiles with the following properties:

- CF 1.6 conformant
- Have maximum interoperability with CF 1.6 implementations in use by MyOcean (OceanSITES conventions), USNODC (USNODC NetCDF templates) and two contributors to AODN (IMOS and METOC)
- Include storage for all labels, metadata and standardised semantic markup that were included in the SeaDataNet ODV format files for the equivalent feature type.

Significant list discussion focussed on the version of NetCDF that should be used for SeaDataNet. The conclusion was that NetCDF 4 should be used wherever possible, but that NetCDF 3, although strongly discouraged, should not be totally forbidden.

1.1. Main principles

OdvSDN2CFPOINT converts SeaDataNet ODV (SDN ODV) file(s) of vertical profiles, time series or trajectories to SeaDataNet NetCDF (CFPOINT).

User can convert one ODV file or one directory with one to n ODV files.
OdvSDN2CFPOINTis bilingual (English – French).

1.2. Technical characteristics

OdvSDN2CFPOINT is portable software that can be downloaded from the SeaDataNet website http://www.seadatanet.org, free of charge, with its user manual.

It is written in Java Language (Version >= 1.6) and it is available under Microsoft 32/64 bits (tested with Windows XP, Seven), Linux 32/64 bits and Solaris (not tested). Log4j is used for error management.

OdvSDN2CFPOINT works offline; however as it uses the SeaDataNet common vocabularies web services to update its lists of values, network connection is needed only when update of these lists is necessary.

- To know if Java is available on your computer, in the right version, follow these steps:
  - Open 'Start' menu, then 'Execute'
  - On the displayed window, enter: 'cmd', then click on 'OK' button
  - Enter 'java -version'
- Check if command has been executed:
  - If not, download the last java version at
    http://java.com/en/download/index.jsp.
  - Else, check the version displayed. The version should be greater than or equal to 1.6.

Figure 1 - Check Java version installed on your computer

1.3. Links with others entities

OdvSDN2CFPOINT uses SeaDataNet vocabularies and EDMO for the data file conversion.

The following lists are used by OdvSDN2CFPOINT:

List Code	List Name
Mapping P02-P01	Mapping between P02 (SeaDataNet Parameter Discovery Vocabulary) and P01 (BODC Parameter Usage Vocabulary)
Mapping P02-P06	Mapping between P02 (SeaDataNet Parameter Discovery Vocabulary) and P06 (BODC data storage units)
EDMO	European Directory of Marine Organizations

These lists are available at:
http://seadatanet.maris2.nl/v_bodc_vocab_v2/welcome.asp

Up-to-date version of the vocabulary lists can be downloaded with OdvSDN2CFPOINT.

2. OdvSDN2CFPOINT installation and uninstallation

2.1. OdvSDN2CFPOINT installation

Get OdvSDN2CFPOINT software from SeaDataNet Web site:
http://www.seadatanet.org/Standards-Software/Software/OdvSDN2CFPOINT

Copy the zip file on your computer, and unzip it.
You will get 2 files: install_ OdvSDN2CFPOINT.jar and launcher_OdvSDN2CFPOINT.bat (launcher_OdvSDN2CFPOINT.sh for Linux)

To install OdvSDN2CFPOINT double click on the file launcher_OdvSDN2CFPOINT.bat (launcher_OdvSDN2CFPOINT.sh for Linux).

Then select your language and run the installation:

1. Accept the terms of the license agreement.
2. Select the installation path (default is C:\Program Files\OdvSDN2CFPOINT for windows), target directory is created if not exists.
3. If you want a shortcut on your Desktop check the box circled in red on the image below. You can create a shortcut for the current user or for all users of the computer (circled in blue); by default “all users” is checked.

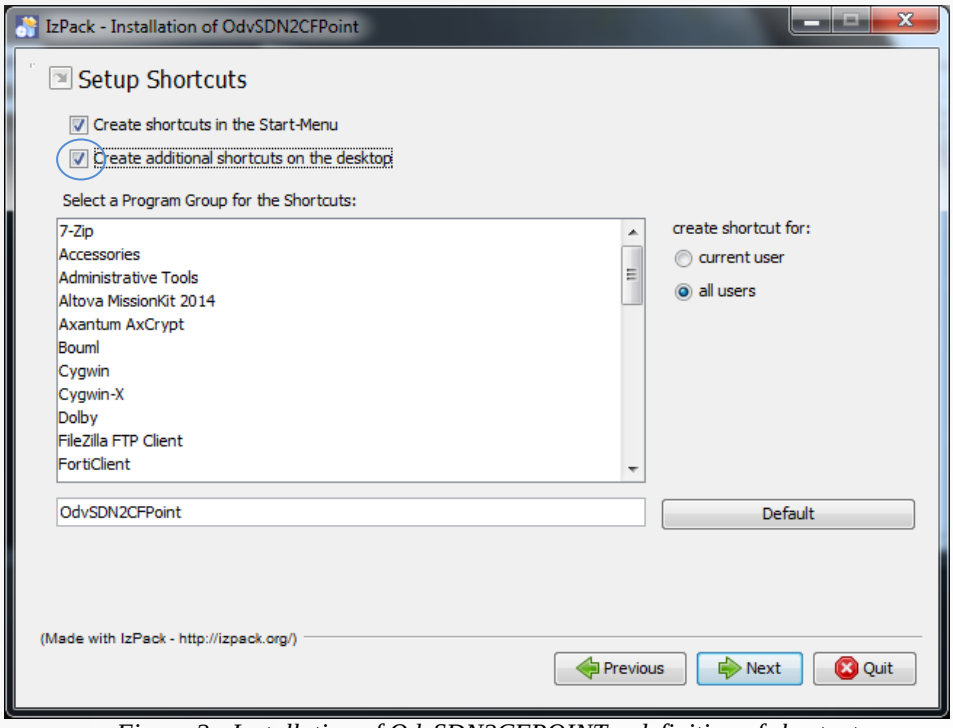
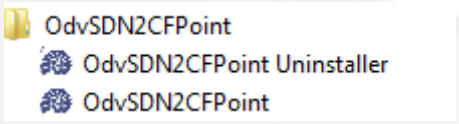


Figure 2 - Installation of OdvSDN2CFPOINT – definition of shortcuts.

The shortcuts are created in the desktop and in the Start menu of the computer with the following icon:

on the desktop or



in the start menu under the group define in the circled in green field in Figure 2 - Installation of OdvSDN2CFPOINT – definition of shortcuts..

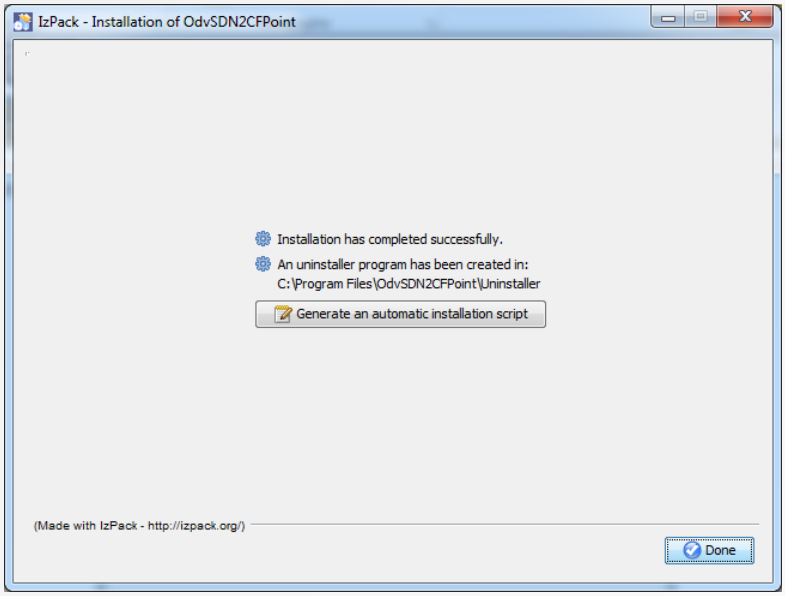


Figure 3 - Last screen of OdvSDN2CFPOINT installation

If OdvSDN2CFPOINT needs to be installed on several computers it is possible to “Generate an automatic installation script, by clicking on the appropriate button on the last screen of OdvSDN2CFPOINT installation (Figure 3 - Last screen of OdvSDN2CFPOINT installation).

2.2. OdvSDN2CFPOINT uninstallation

If you want to remove OdvSDN2CFPOINT from your computer, run the uninstaller by selecting OdvSDN2CFPOINT Uninstaller in the start menu of your computer (cf. OdvSDN2CFPOINT installation).
If running the uninstaller generates the following message:

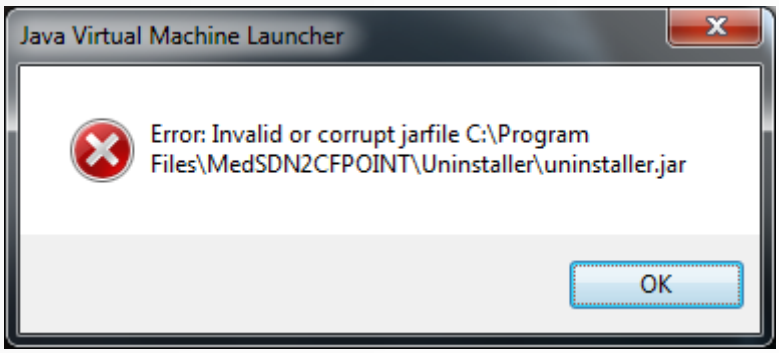


Figure 4 - error uninstaller message

Please run:

<OdvSDN2CFPOINT_*Installation_directory*>\Uninstaller\launcher_uninstaller.bat(launcher_uninstaller.sh for Linux).

The following window opens:

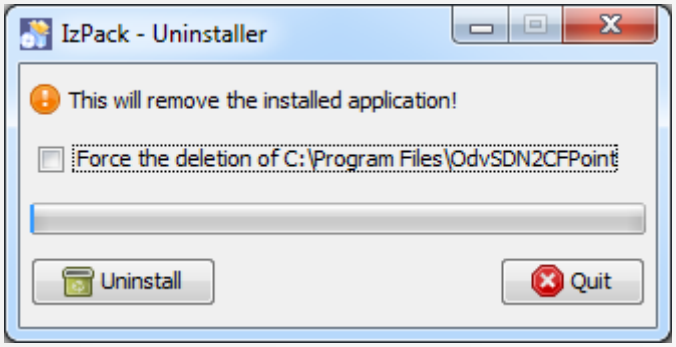


Figure 5 - uninstallation screen

Click on Force the deletion of C:\<OdvSDN2CFPOINT_Installation_directory> and then click on Uninstall.

3. RUNNING OdvSDN2CFPOINT

3.1. Main Menu

The main menu of OdvSDN2CFPOINT has 3 choices:

- Options/Settings
- Options/Vocabulary update
- ?/About OdvSDN2CFPOINT

3.1.1. Settings

This screen is to:

- Choose the language of OdvSDN2CFPOINT. To take into account language change, user must exit and restart the software.
- Define a manual PROXY configuration: if box “Use manual Proxy configuration” is checked, HTTP Proxy address and Port are mandatory.

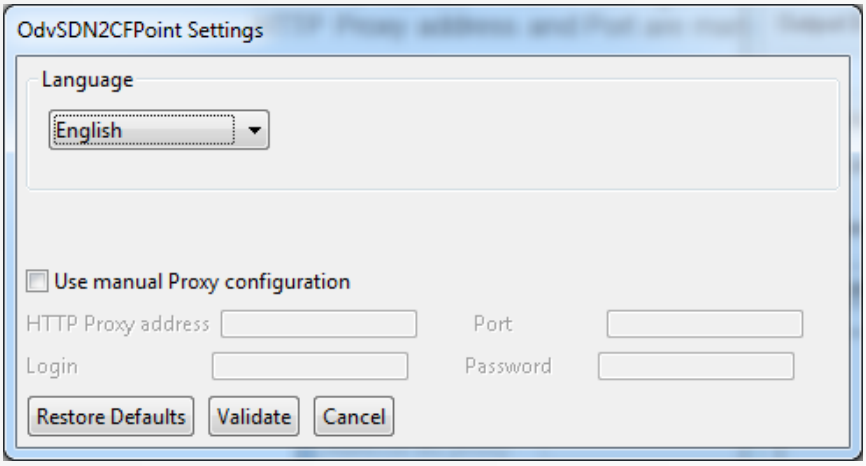


Figure 6 - Settings screen

The “Restore defaults” button restores the default values for all the fields of this screen. This action cannot be cancelled.

3.1.2. Vocabulary update

This function is to update the vocabulary lists described in paragraph Links with others entities; it needs an internet connection and makes use of the Web services defined in the settings of OdvSDN2CFPOINT

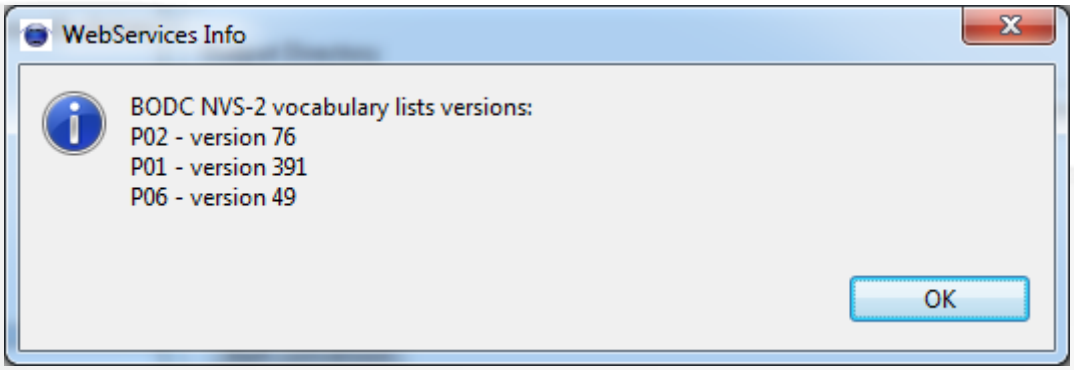


Figure 7–Result while updating vocabulary list

3.1.3. About OdvSDN2CFPOINT

The version of the software is available on this screen.

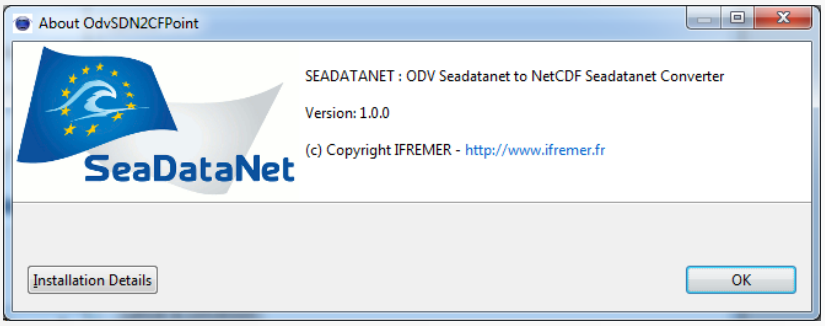


Figure 8 - About OdvSDN2CFPOINT

3.2. Main screen

This screen is to input information necessary to data conversion, and also to run data conversion

3.2.1. User Interface

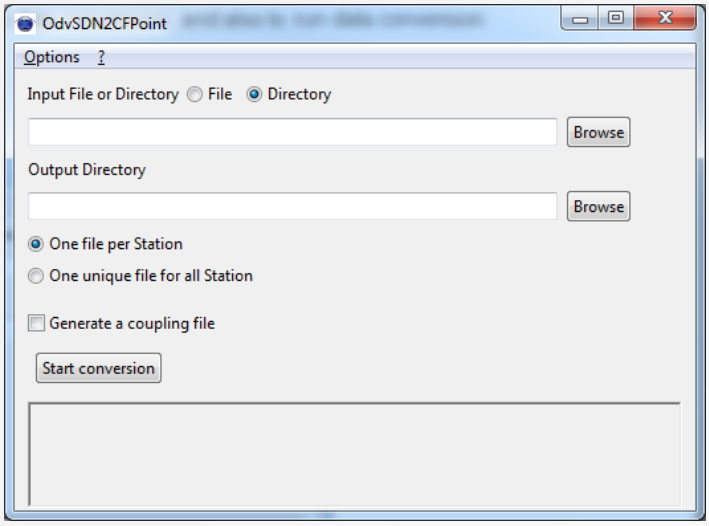


Figure 9 - Main screen of OdvSDN2CFPOINT

3.2.1.1. Input file or directory

User must tell OdvSDN2CFPOINT if he wants to convert one file or one directory (default value is directory).

Then the name of the file or of the directory can be input manually or selected through the “Browse” button.
If a directory is selected, OdvSDN2CFPOINT converts only the files in this directory, **not in the sub-directories if there are some.**

3.2.1.2. Output directory

This output directory, where converted files will be written, can be input manually or selected through the “Browse” button.

If this directory does not exist, OdvSDN2CFPOINT will create it.

The output directory must be different from the input one.

3.2.1.3. Mono or Multi Stations

User must tell OdvSDN2CFPOINT if he wants to convert in monostation (One file per Station) or in multistation (one to n multi-station file(s))

In multistationmode : the ouput file contains each Station of One input file.
Output filename is the same as input filename.

In monstationmode : the ouput file contains one Station of One input file.

Output filename is the LOCAL_CDI_ID +.nc

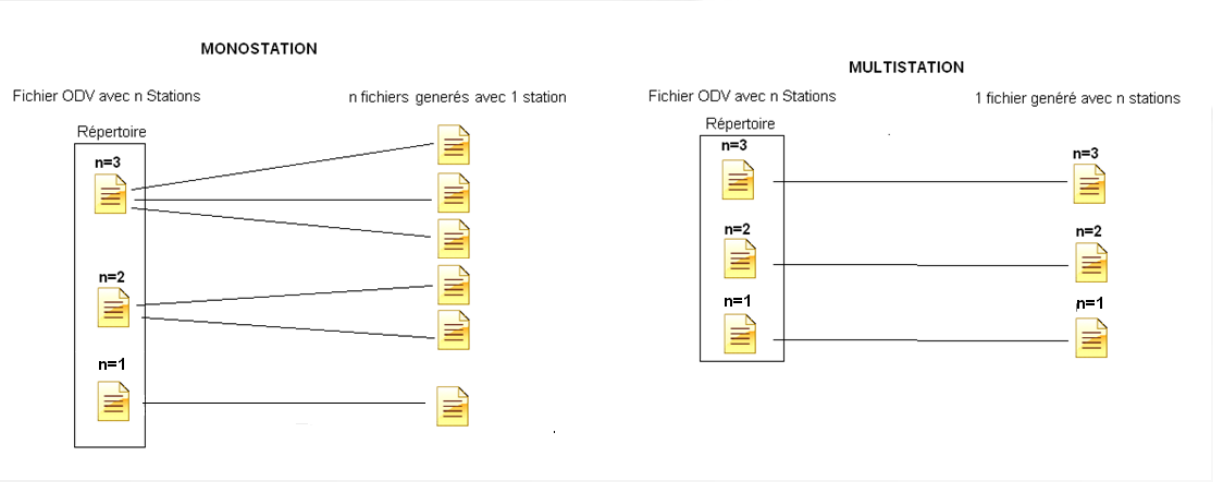


Figure 10- Directory conversion

3.2.1.4. Generation of a coupling table

If check box “Generate a coupling file” is checked, while reformatting files, OdvSDN2CFPOINT creates a coupling file (as a text file) which gives the mapping between a unique identifier of a CDI element (LOCAL_CDI_ID which is one station of vertical profiles, one time-series or one trajectory) and the file in which this element can be found. The coupling file is used by SeaDataNet download manager.

The coupling file contains the following information:

- LOCAl_CDI_ID,
- Modus = 1 (for mono-station file) or 3 (for multi-station file)
- Format (which is CFPOINT)
- File name

Example of a coupling file:

LOCAL_CDI_ID;MODUS;FORMAT;FILENAME
FI35200140070_00040_H10;3;CFPOINT;2001040070.nc
FI35200140070_00050_H10;3;CFPOINT;2001040070.nc
FI35200140070_00060_H10;3;CFPOINT;2001040070.nc
FI35200140070_00070_H10;3;CFPOINT;2001040070.nc
FI35200140070_00080_H10;3;CFPOINT;2001040070.nc
FI35200301012_10239_D01;1;CFPOINT;FI35200301012_10239_D01.nc
FI35200301012_11943_D01;1;CFPOINT;FI35200301012_11943_D01.nc
FI35200301012_07160_D01;1;CFPOINT;FI35200301012_07160_D01.nc

3.2.1.5. Start conversion button

A click on this button starts the validation of input parameters. Once the input parameters are checked and OK, conversion of files starts.

If a coupling file is asked, the first screen (Figure 11 - Name of the coupling file) that opens is to enter the name of the coupling file (by default this name is set to coupling .txt), then the user is asked to enter the “Output directory prefix” (Figure 10) which will be subtracted from the file name in the coupling file.

For example:

output file name = C:\username\NEMO\cruise_name\file_name
and output directory prefix = C:\username\NEMO
file name in the coupling file will be : cruise_name\file_name

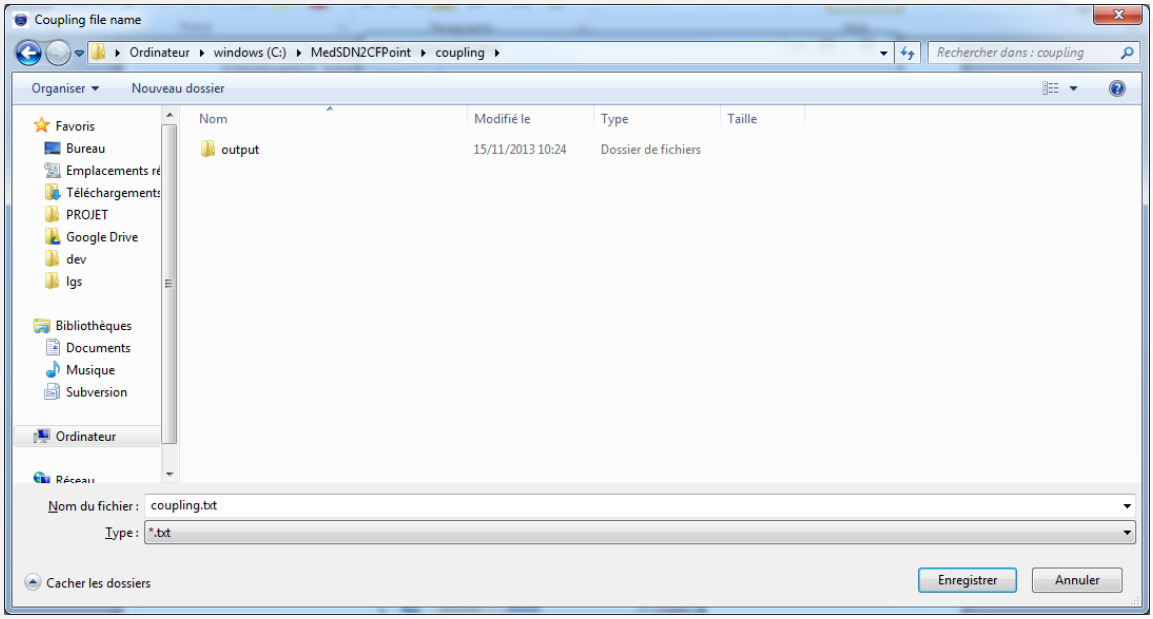


Figure 11 - Name of the coupling file

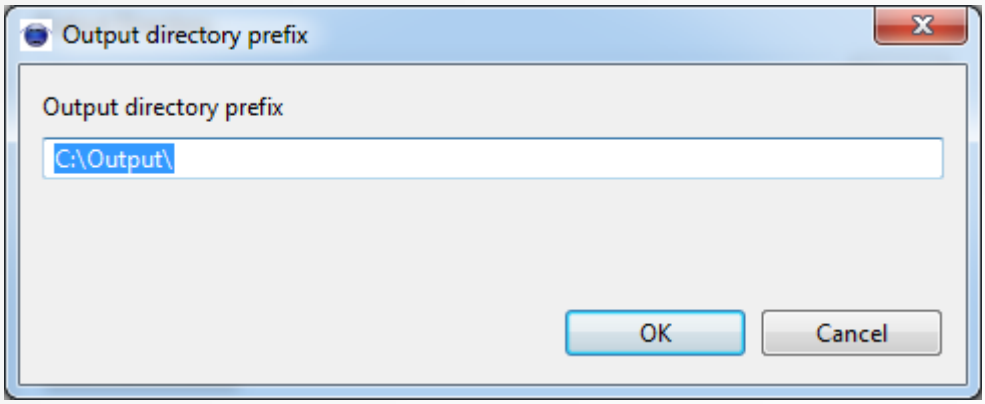


Figure 12 - Input of the Output directory prefix

3.2.1.6. Error messages

Error messages are written in the field under the “Start conversion” button.

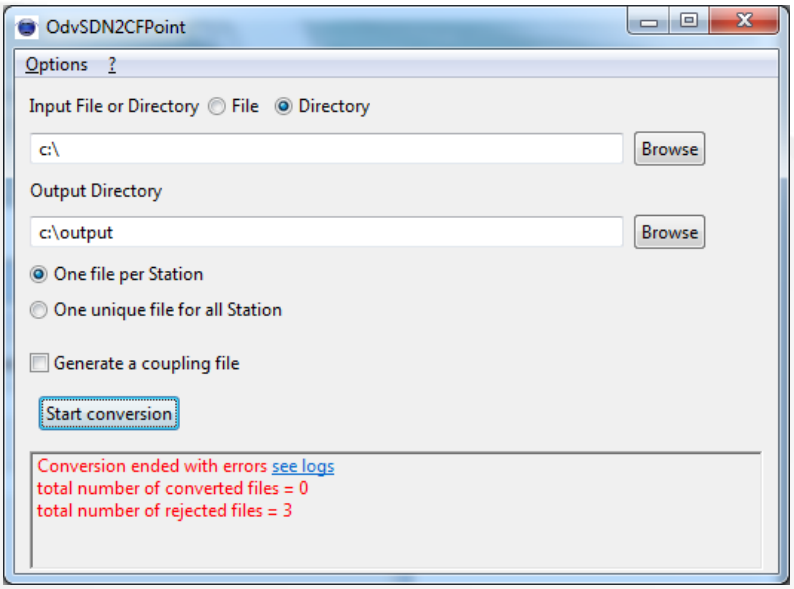


Figure 13 - Error message on EDMO Code

This message is reset to empty at each new file or directory conversion.

3.2.2. Processing

3.2.2.1. File Conversion

During the file conversion a separate window opens. A progress bar, the name of the file being converted and its rank /Total number of files are displayed.

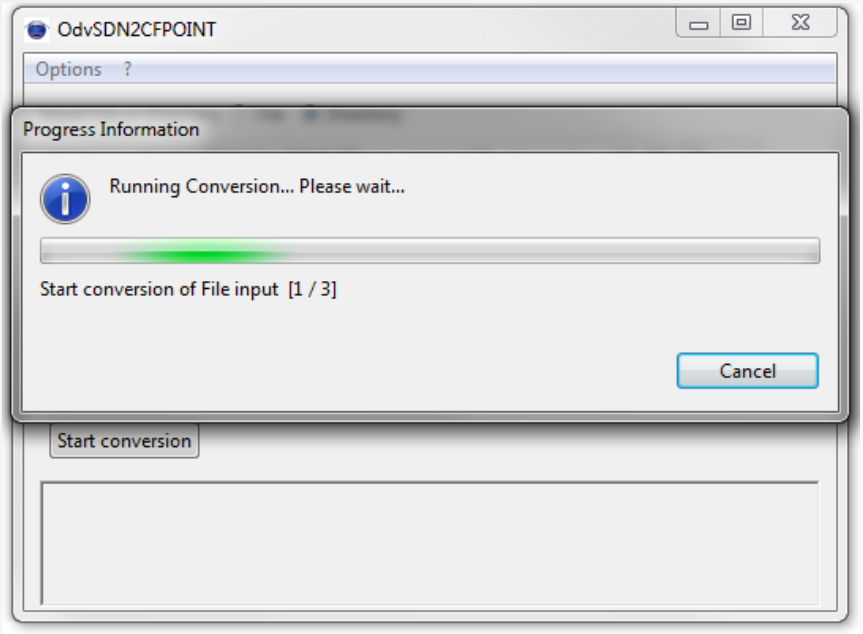


Figure 14 - Progress bar while conversion is running

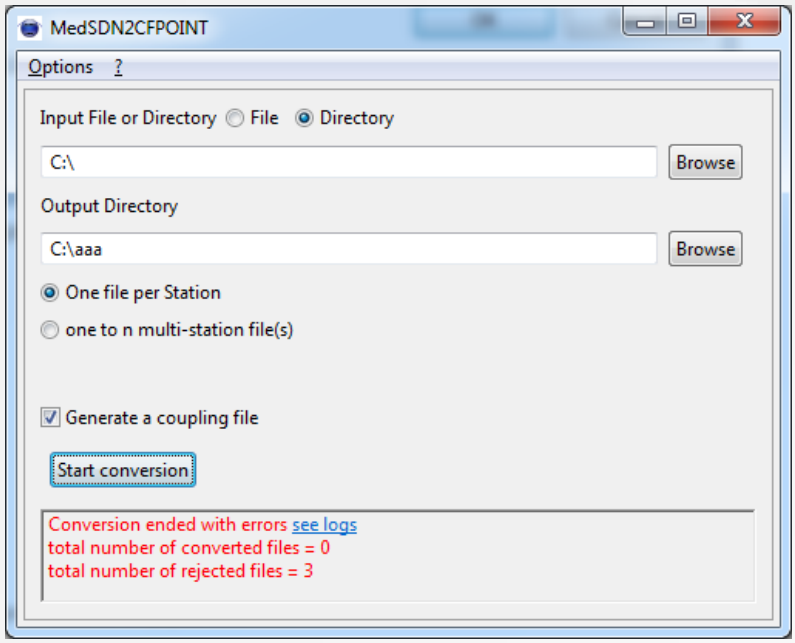
Conversion can be cancelled at any time by clicking on the “Cancel” button.

For each file being converted, OdvSDN2CFPOINT:

- Verifies the file format: conversion runs only if the file is at SDN ODV format otherwise an error is registered in the “Log file” and the software moves to the next file.
- Detect the type of file. Can be Profile, Trajectory or TimeSeries.
- Convert it to CFPOINT file(s).

3.2.2.2. Errors management

Errors are registered in a log file which is located in OdvSDN2CFPOINT installation directory. It can be open through OdvSDN2CFPOINT main screen by clicking on “see log” in the error window.



MedSDN2CFPOINT.log

```
D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_profile_mono.txt
2013-12-19 10:20:15,525 MedSDN2CFPOINT INFO  - ____________________________________________________
2013-12-19 10:20:15,525 MedSDN2CFPOINT INFO  - Start reading input file D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_profile_multi.txt
2013-12-19 10:20:15,525 MedSDN2CFPOINT ERROR - first char of first line must be *
2013-12-19 10:20:15,525 MedSDN2CFPOINT ERROR - no SDN Mmapping found
2013-12-19 10:20:15,525 MedSDN2CFPOINT ERROR - -- -- -- -- FileFormat = UNKNOWN must be MEDATLAS_SDN
2013-12-19 10:20:15,525 MedSDN2CFPOINT ERROR - Input file not in a supported format :
D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_profile_multi.txt
2013-12-19 10:20:15,525 MedSDN2CFPOINT INFO  - ____________________________________________________
2013-12-19 10:20:15,525 MedSDN2CFPOINT INFO  - Start reading input file D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_timeseries_mono.txt
2013-12-19 10:20:15,535 MedSDN2CFPOINT ERROR - first char of first line must be *
2013-12-19 10:20:15,535 MedSDN2CFPOINT ERROR - no SDN Mmapping found
2013-12-19 10:20:15,535 MedSDN2CFPOINT ERROR - -- -- -- -- FileFormat = UNKNOWN must be MEDATLAS_SDN
2013-12-19 10:20:15,535 MedSDN2CFPOINT ERROR - Input file not in a supported format :
D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_timeseries_mono.txt
2013-12-19 10:20:15,545 MedSDN2CFPOINT INFO  - ____________________________________________________
2013-12-19 10:20:15,545 MedSDN2CFPOINT INFO  - Start reading input file D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_timeseries_multi.txt
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - first char of first line must be *
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - no SDN Mmapping found
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - -- -- -- -- FileFormat = UNKNOWN must be MEDATLAS_SDN
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - Input file not in a supported format :
D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_timeseries_multi.txt
2013-12-19 10:20:15,545 MedSDN2CFPOINT INFO  - ____________________________________________________
2013-12-19 10:20:15,545 MedSDN2CFPOINT INFO  - Start reading input file D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_trajectoire_mono.txt
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - first char of first line must be *
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - no SDN Mmapping found
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - -- -- -- -- FileFormat = UNKNOWN must be MEDATLAS_SDN
2013-12-19 10:20:15,545 MedSDN2CFPOINT ERROR - Input file not in a supported format :
D:\dev\workspaceSDN\OdvSDN2CFPoint_datatest\success\fichier_trajectoire_mono.txt
2013-12-19 10:20:15,555 MedSDN2CFPOINT ERROR - Conversion ended with errors
2013-12-19 10:20:15,555 MedSDN2CFPOINT INFO  - total number of converted files = 0
2013-12-19 10:20:15,555 MedSDN2CFPOINT INFO  - total number of rejected files = 17
2013-12-19 10:20:15,555 MedSDN2CFPOINT INFO  - ------ END CONVERSION ------
```

Figure 15 - Log file for errors

Maximum size of the error log file is 5 Mb. When this maximum size is reached, OdvSDN2CFPOINT saves it and opens a new log file. The software keeps 4 log files maximum and deletes the oldest log files.

One line in the log file is composed as following:

- Date (format ISO 8601)
- Name of the Software
- Error severity level
- Error message

The severity level is one of the four following values:

INFO	Informative messages for starting of the conversion or successful conversion
WARN	Informative messages which does not stop the conversion of the current file but which may need recommended actions (example: if a file is at BODC vocabulary V1 a warning tell the user that it is recommended to move it to BODC vocabulary V2)
ERROR	For conversion errors : conversion is cancelled on the current file but continues on the other files
FATAL	For conversion errors which stop the processing of the files

For example:

- If a mapping between P02 and P01 is missing an ERROR is detected and the file containing this parameter is not converted.

3.2.2.3. Error table

N°	Error	Analyse
01	The output folder must be different from the input folder	change output directory path
02	'Input File or Directory' parameter is mandatory	choose an input file or a directory to convert
03	'Output Directory' parameter is mandatory.	choose an output directory path
04	Input file / directory not accessible or readable	check if the Input file / directory is accessible
05	Output Directory not writeable	check if output directory is accessible
06	No file found	check the input directory
07	Input file not accessible or readable	check if the Input file / directory is accessible
08	Input file isn't a file	Click on directory radio
09	Error reading input file	If you get this message, send an email to sdn-userdesk@seadatanet.org
10	Output Directory can't be create	check if output directory parent is accessible
11	'Output Directory' parameter must be a folder	choose an output directory path
12	Error closing file	Checkif file / directory is accessible
13	Variable XXXX is not SDN Compliant	If you get this message, send an email to sdn-userdesk@seadatanet.org
14	Minimum number of station should be more than 0	If you get this message, send an email to sdn-userdesk@seadatanet.org
15	Minimum number of station should be more than 0	If you get this message, send an email to sdn-userdesk@seadatanet.org
16	Invalid input Type value	If you get this message, send an email to sdn-userdesk@seadatanet.org
17	CFPoint dimensions list can’t be empty	If you get this message, send an email to sdn-userdesk@seadatanet.org
18	Error creating netCDF global attributes	If you get this message, send an email to sdn-userdesk@seadatanet.org

19	Error creating CFPoint metadata	If you get this message, send an email to sdn-userdesk@seadatanet.org
20	Variable XXX not found	If you get this message, send an email to sdn-userdesk@seadatanet.org
21	Error setting variable XXXX value	If you get this message, send an email to sdn-userdesk@seadatanet.org
22	Z Variable name not found	If you get this message, send an email to sdn-userdesk@seadatanet.org
23	Z standard name not found	If you get this message, send an email to sdn-userdesk@seadatanet.org
24	PXX to PXX vocab mapping not found	Try to update the vocabulary
25	Error loading Vocab List	Try to update the vocabulary
26	Error parsing semantic header, line X	Check Semantic Header line X
27	Error parsing SDN parameter subject	Check SDN Parameter values
28	Error parsing SDN parameter object	Check SDN Parameter values
29	Error detecting vertical reference	profile : the first Parameter must be an AHGT parameter, trajectory, timeseries : an AHGT DEPTH parameter must be set
30	SDN parameter object XXXX not found in BODC list	the code XXXX is not found in P01 list, try to update list by execute update vocabulary
31	Error parsing SDN parameter unit	Check if SDN parameter mapping lines
32	SDN parameter unit XXXX not found in BODC list	the code XXXX is not found in P06 list, try to update list by execute update vocabulary
33	SDN parameter mapping start, expected data, line X	Check if SDN parameter mapping is at the good place in file, it must be set before data
34	Error parsing Column header row, line X	Check Column Header
35	Error detected line X, expected SDN parameter mapping	Check if SDN parameter mapping is at the good place in file
36	Error parsing input file, line X	Check if file is valid
37	Error parsing data, line X	Check data line X
38	Bad values number	Number of value in line not valid check line
39	Parse format X not yet implemented	If you get this message, send an email to sdn-userdesk@seadatanet.org
40	Impossible to detect type of file, error occurred, line X	The type of file (vertical profile, time series or trajectory) does not match the data typetype (see page 6 of http://www.seadatanet.org/content/download/16251/106283/file/SDN2_D85_WP8_Datafile_formats.pdf)

41	max size X of Y exceeded	If you get this message, send an email to sdn-userdesk@seadatanet.org
42	Time-series with Depth parameter not constant	Check first DEPTH variable constante for TIMESERIES

3.3. Batch mode

OdvSDN2CFPOINT can be run in batch mode.

You must set the EDMO code, this is necessary before using OdvSDN2CFPOINT in batch mode.

Launch OdvSDN2CFPOINT with the -batch options and useful options as explained below:

OdvSDN2CFPOINT -batch [-append] [-batch] [-ctFilename<arg>] [-i<arg>] [-o <arg>] [-outputPrefix<arg>] [-replace] [-mono] [-multi]

Options:

-batch	launch OdvSDN2CFPOINT in batch mode
-i<arg>	Input file / directory
-o <arg>	Output directory
-append	append data in an existing coupling table file (replace must not be present)
-replace	replace an existing coupling table file (append must not be present)
-outputPrefix <arg>	Output prefix (coupling table filename must be present)
-ctFilename <arg>	coupling table filename (outputPrefix must be present)
-mono/multi	launch conversion in Mono or multi Station Mode

Example under windows:

```
C:\Program Files\OdvSDN2CFPOINT>OdvSDN2CFPOINT.exe -batch -i "C: \fooDirIn" -o "C:
\fooDirOut"
-ctFilename "C:\fooDirOut\fooCoupling.txt" -outputPrefix "C:\fooDirOut" –replace -mono
```

Example under linux:

```
/home/user/OdvSDN2CFPOINT>OdvSDN2CFPOINT -batch -i "/home/user/fooDirIn" -o
"/home/user/fooDirOut" –ctFilename"/home/user/fooDirOut/fooCoupling.txt" -outputPrefix
"/home/user/fooDirOut" –replace -mono
```