

# **MST2SDS Software Manual**

© 2015 Marine Sonic Technology, Ltd.

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This product was designed and developed by a team of engineers at Marine Sonic Technology, Ltd.

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# Section 1

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- Introduction

# 1 Introduction

This software manual provides a description of how to use the MST2SDS software. The MST2SDS software makes it easy to convert MST files (written by Sea Scan PC) to SDS format. It supports MST files that were written by Sea Scan PC V1.6.13 and higher. The SDS files created with MST2SDS are for use with Sea Scan Survey V2 and higher as well as other 3rd party applications that read SDS files.

This manual is separated into several sections: User Interface, Step By Step, Details on MSTIFF Data Used, and Software History.

The [User Interface](#)<sup>[4]</sup> section describes all of the buttons and window controls in the MST2SDS software.

The [Step By Step](#)<sup>[14]</sup> section walks you through an example MST to SDS file conversion.

The [Details on MSTIFF Data Used](#)<sup>[20]</sup> section provides information on the data used in the conversion process.

The [Software History](#)<sup>[22]</sup> section lists all of the versions of software and the changes made. The versions are listed newest to oldest.

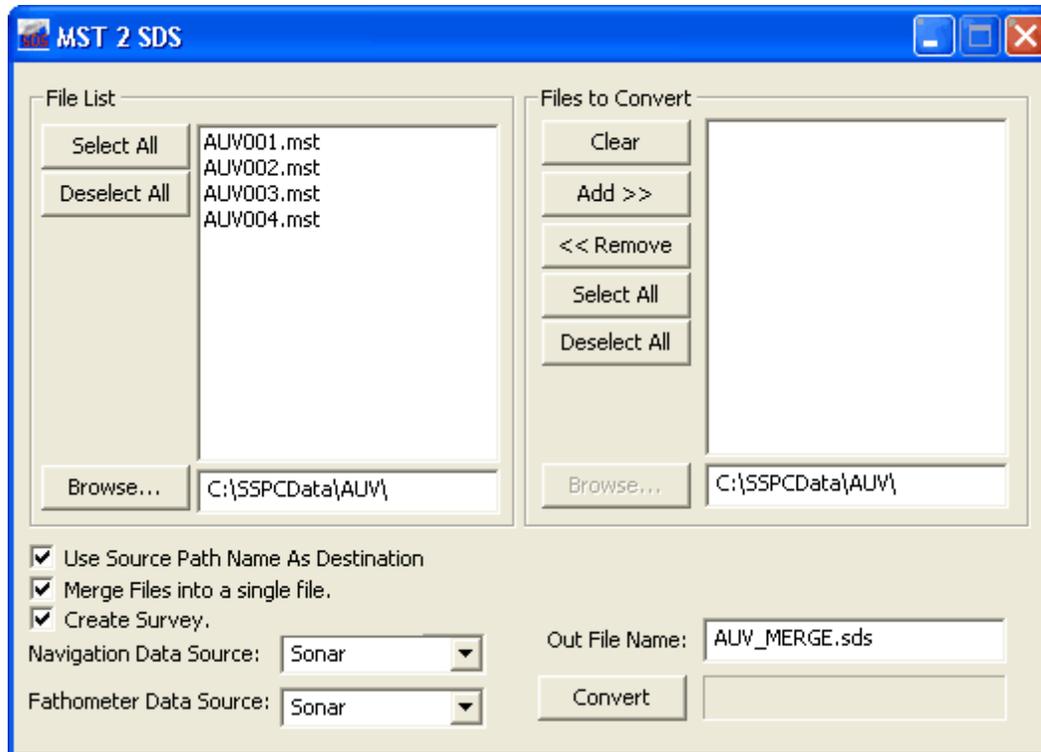
# Section 2

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- **User Interface**

## 2 User Interface

This section introduces the MST2SDS software's window layout. The window is displayed below.

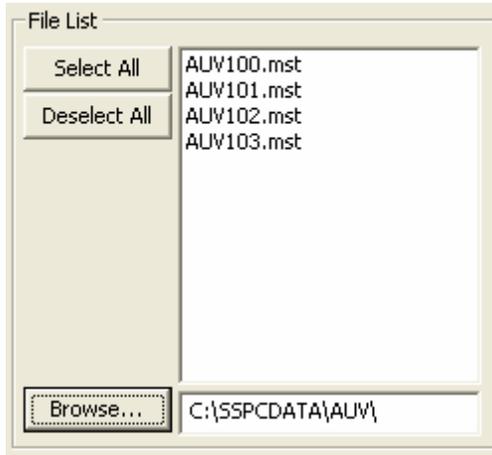


The window can be broken down into several sections:

- File List
- File to Convert List
- File Conversion Options
- System Menu

### 2.1 File List

The File List section contains all the controls to display and select a list of files to convert.



Listed below is a description of all of the buttons and controls in this section.



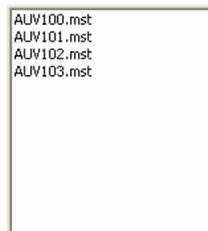
The Select All button selects all of the files in the File List box.



The Deselect All button deselects all of the files in the File List box.



The Browse button shows the Select A Folder or File(s) window. Choosing a folder will transfer all of the files in the chosen folder to the Files List box. Multiple files can be selected by using the Ctrl or Shift keys while clicking in the Select A Folder or File(s) window.



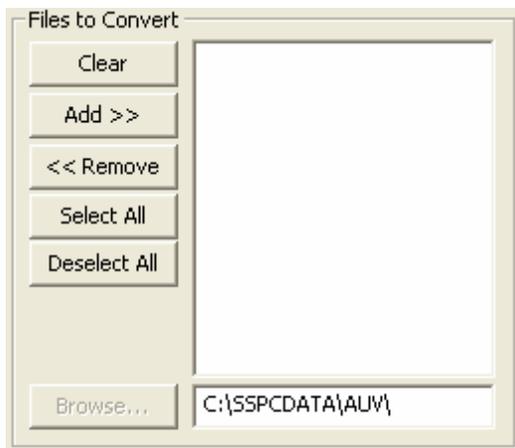
The File List box shows all of the .MST files in the current folder. Select from this list to transfer over to the Files To Convert list. Multiple files can be selected by clicking on them. Using the SHIFT key in conjunction with clicking will allow for large batches of files to be selected. To deselect a file simply click on it again. To deselect an individual file that was selected using the SHIFT key, press and hold the CTRL key while clicking on the file.



The Source Path text box shows the current folder that is the source of the files in the File List box. Choose the Browse button or change the Source Path by typing in this text box.

## 2.2 Files To Convert

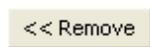
The Files To Convert section contains all the controls to select a list of files to convert. These files are transferred from the File List box.



The Clear button clears the list of files in the Files To Convert list box. Clearing the files transfers them back to the Files List.



The Add button transfers all selected files in the Files List to the Files To Convert list box.



The Remove button removes all selected files in the Files To Convert list box and places them back into the Files List.



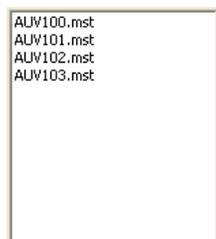
The Select All button selects all of the files in the Files To Convert list box.



The Deselect All button deselects all of the files in the Files To Convert list box.



The Browse button shows the Select A Folder or File(s) window. Choosing a folder will place the folder's path into the Destination Path text box.

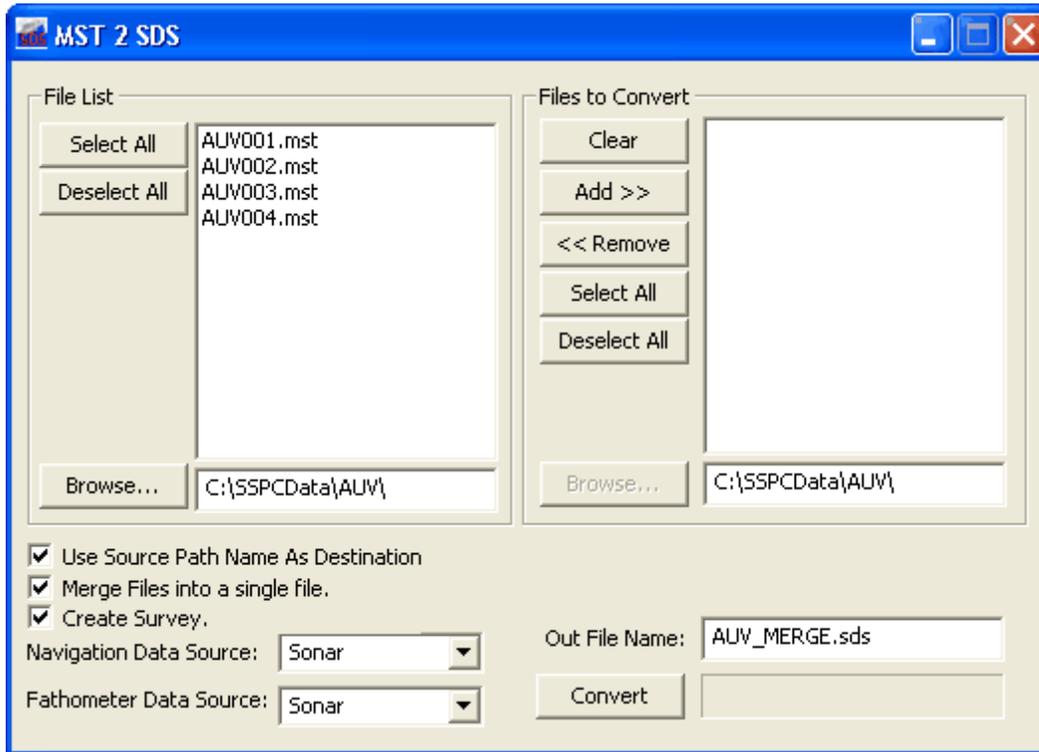


The Files To Convert list box shows all of the .MST files that are currently set to be converted. They will be converted in the order that they appear. The files on the top of the list are converted first. Multiple files can be selected by clicking on them. Using the SHIFT key in conjunction with clicking will allow for large batches of files to be selected. To deselect a file simply click on it again. To deselect an individual file that was selected using the SHIFT key, press and hold the CTRL key while clicking on the file.

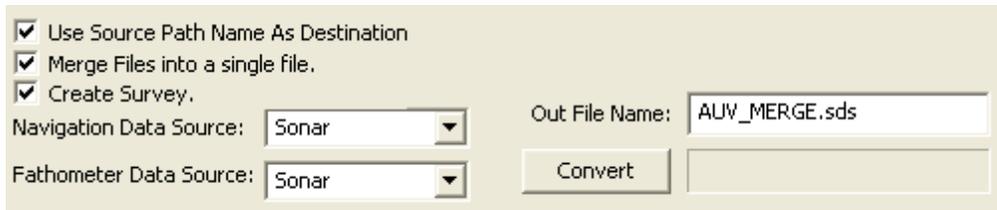


The Destination Path text box shows the current folder that is the destination for the converted SDS files. Choose the Browse button or change the Destination Path by typing in this text box.

## 2.3 File Conversion Options



The File Conversion Options allow the user to configure some aspects of the file conversion process. Some of the options apply to the file naming and some of the options apply to the data itself. The last group of buttons to the right allow the user to initiate the conversion process and get feedback from the software's progress.



The following is a description of all of the controls in the File Conversion Options section:

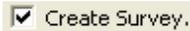
Use Source Path Name As Destination

The Use Source Path Name As Destination check box allows the Destination Path (folder) to automatically set when the Source Path (folder) is set. When this box is checked the Destination Path is not editable. To set the Destination path manually simply uncheck this check box.

Merge Files into a single file.

The Merge Files check box configures the software to automatically merge all of the MST files together before starting the SDS conversion. This will result in 1 output SDS file. The name of the SDS file will be automatically chosen based on the first MST file name. If you want to change the output file name please change the Out File Name in the text

box described below. When this check box is unchecked each of the MST files will be converted into an individual SDS file and the names of the output files will be chosen automatically based on the name of the MST files.



Create Survey check configures the software to create a .XVY file and marker.XML file to open with the Sea Scan Survey software. This is important if you want to use the event marking features of Sea Scan Survey. When converting multiple files that are not merged, this also allows Sea Scan Survey to load all of the files and display them in a continuous waterfall.



The Navigation Data Source combo box allows the user to set where the the Navigation data originated from. If your files are from a towed Sea Scan PC system you will want to set this to Ship. If your files are from an AUV based Sea Scan PC system you will want to set this to Sonar.



The Fathometer Data Source combo box allows the user to set where the Fathometer data has originated from. If your files are from a towed Sea Scan PC system you will want to set this to Ship. If your files are from an AUV based Sea Scan PC system you will want to set this to Sonar.



This text box allows the user to change the merged SDS file name.



The Convert button starts the conversion progress. This button is also activated by pressing the ENTER key when in main window.



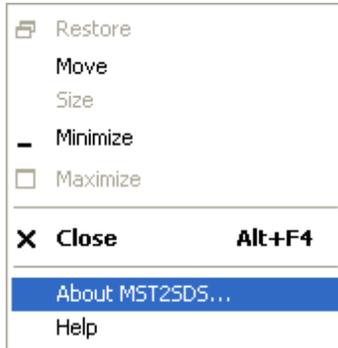
The Conversion Progress Bar shows the progress of the SDS file conversion. The bar will tick 1 notch for each step in the conversion process.

## 2.4 System Menu

The system menu allows access to common window functions. These functions include Move, Minimize, Close, About, and Help. You can access the system menu key by clicking the MST2SDS application's icon in the left hand side of the caption bar.



Picture below is the system menu.



Clicking the About MST2SDS... menu option will show the About window which will display the software's version number and support information.

Clicking the Help option will show the help file for the software. You can also access the Help at any time by pressing the F1 key.

# **Section 3**

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- **Command Line Interface**

## 3 Command Line Interface

The MST2SDS command line interface allows the software to be operated completely from the command line. This gives the software the capability of being scripted for automated use.

Simply running the program with no parameters will cause the program to display the graphical user interface. You must specify at least one parameter to enable the command line mode of the software.

The command line usage is as follows:

```
mst2sds.exe /switch (more switches) filename (more filenames)
```

There are 2 specific groups of parameters: Switches and File Names.

### 3.1 Switches

Switches are preceded with a forward slash "/" and typically consist of a keyword and then (if needed) an equals sign "=" followed by a value.

The possible switches are:

<code>/?</code>	Shows the command line options.
<code>/merge=&lt;filename&gt;</code>	Merge all files into single .sds file, <filename> is optional. If no file name is specified it will be derived from the first file to be converted.
<code>/survey</code>	Create survey (creates the .xvy and marker.xml files for the .sds files).
<code>/navsource=#</code>	Sets the source of the navigation data where # is a number. 0=SHIP, 1=SONAR, 2=SENSOR1, 3=SENSOR2
<code>/fatsource=#</code>	Sets the source of the fathometer data where # is a number. 0=SHIP, 1=SONAR, 2=SENSOR1, 3=SENSOR2
<code>/source=&lt;source path&gt;</code>	Sets the source folder of the files to convert. (please note that a file list is not assumed to be located at the source, only the files listed within)
<code>/dest=&lt;destination path&gt;</code>	Sets the destination folder of the files to convert. If no destination is specified, the generated files will be placed in the source folder.

### 3.2 File Names

The MST2SDS software can either take individual file names or a file list contained in a .txt text file.

To specify a file name simply use the file name with no path included. The source path from the switches will be used, or if none specified the current working path will be used.

To specify a file list create a text file with the extension ".txt". In the file include one file name (no path) per line. The file list must be specified with a full path or be located in the current working directory.

More than one file list or file can be specified on the command line.

### 3.3 Example Command Line

#### Example 1

In this example we merge all 4 files together, set the navigation and fathometer data source to SONAR, and set the source and destination paths. The files are specified individually.

```
mst2sds /merge=example.sds /survey /navsource=1 /fatsource=1 /source=C:\SSPCDATA\AUV\ /  
dest=C:\SSPCDATA\AUV_SURVEY\ AUV001.MST AUV002.MST AUV003.MST AUV004.MST
```

#### Example 2

In this example we convert each file to individual .SDS files and create a survey. The source and destination path names are set. A file list is then specified instead of individual files.

```
mst2sds /survey /navsource=1 /fatsource=1 /source=C:\SSPCDATA\AUV\ /dest=C:\SSPCDATA  
\AUV_SURVEY\ C:\SSPCDATA\AUV\FILES.TXT
```

#### Example File List

The following is example content of the FILES.TXT file list use in example 2.

```
AUV001.MST  
AUV002.MST  
AUV003.MST  
AUV004.MST
```

# Section 4

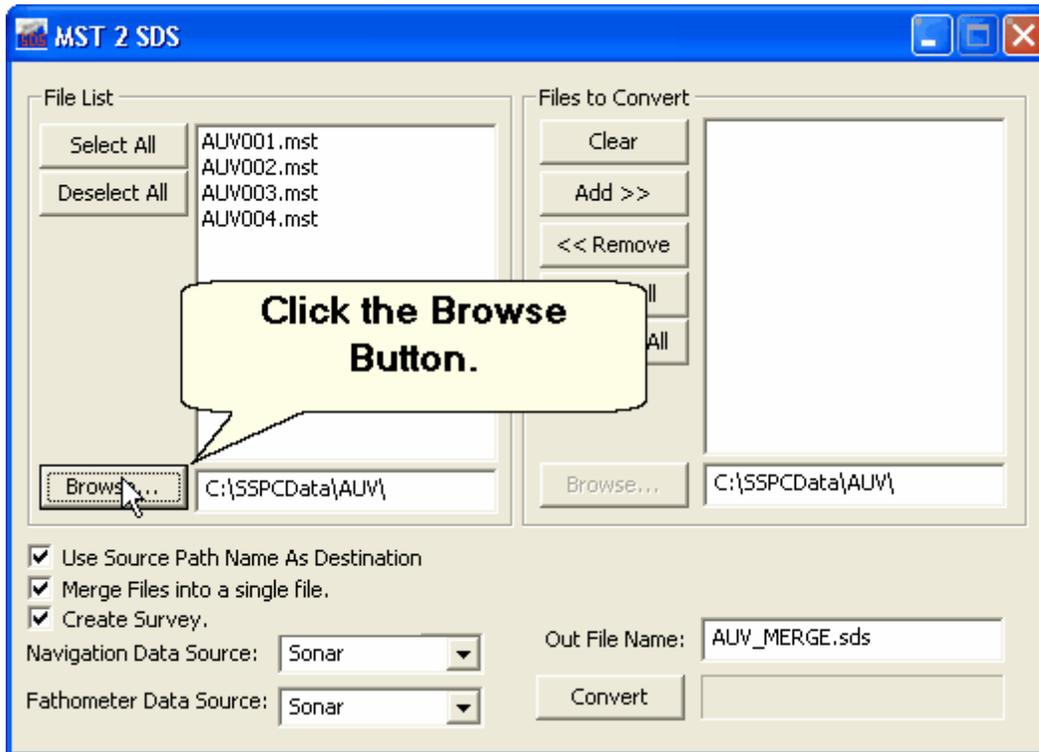
---

- Step By Step

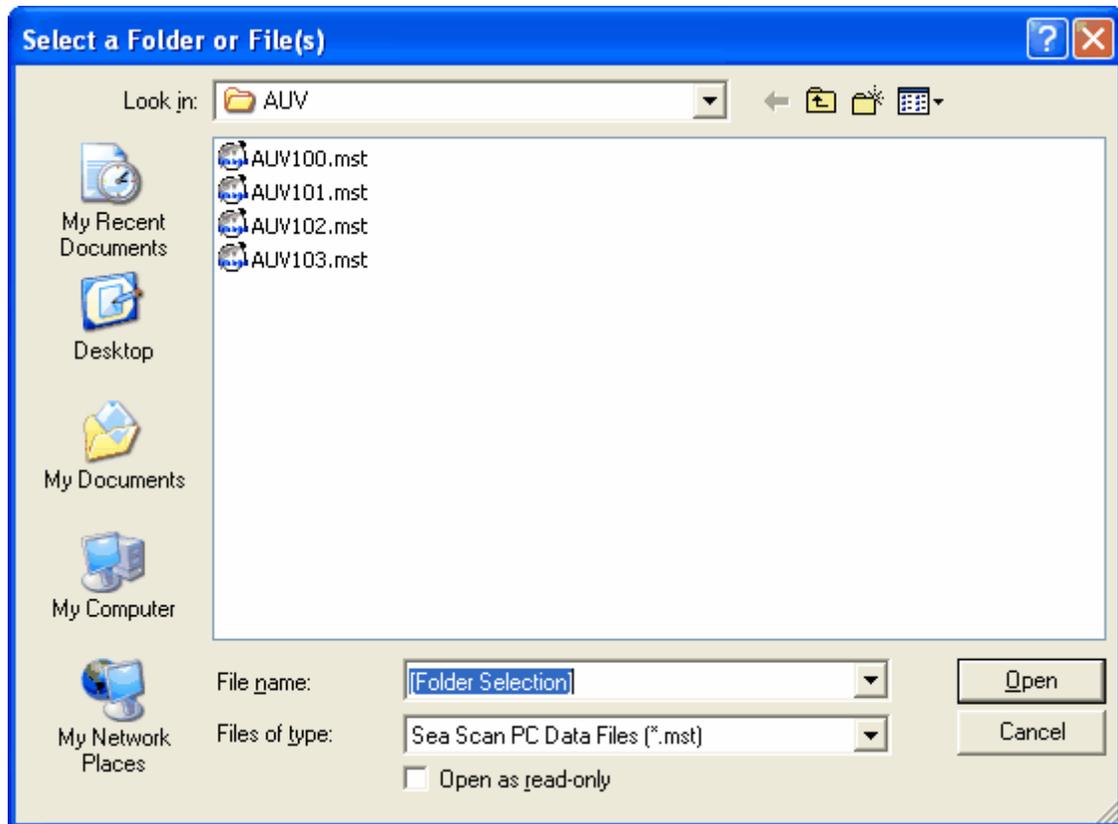
## 4 Step By Step

This sections walks you through a typical conversion process.

The first step is to choose the source folder that the MST files reside in. Do this by clicking the Browse button under the File List section.

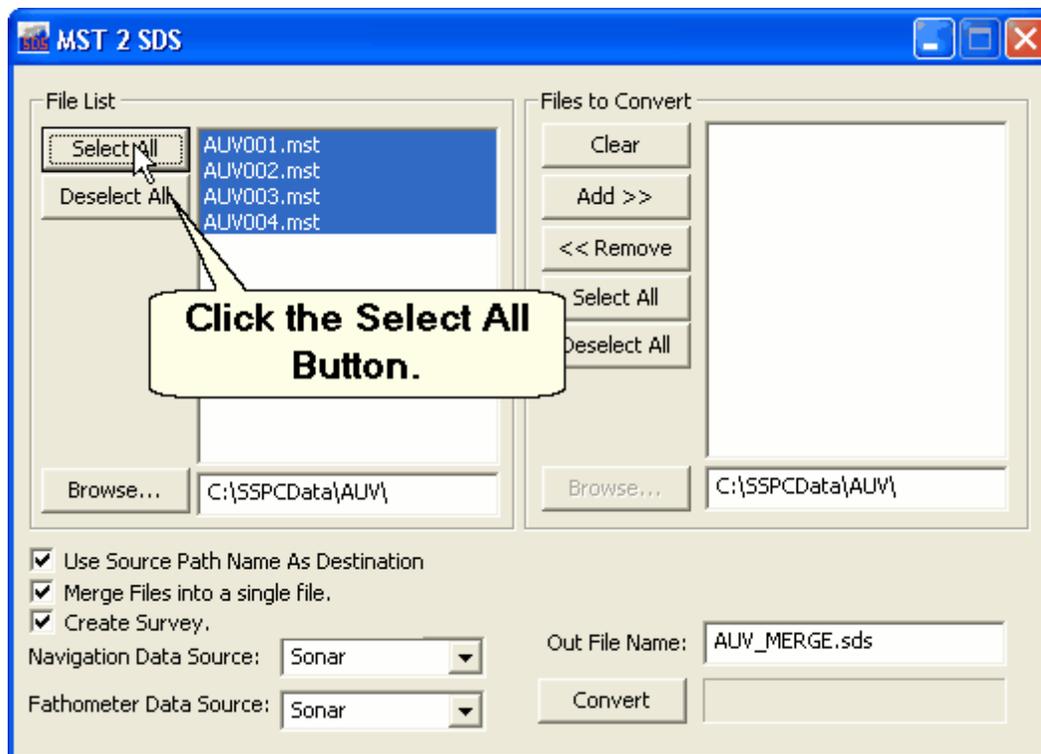


This will show the Select a Folder or File(s) window. This window is fairly standard and operates as it does in thousands of other software applications that run on the Windows operating system.



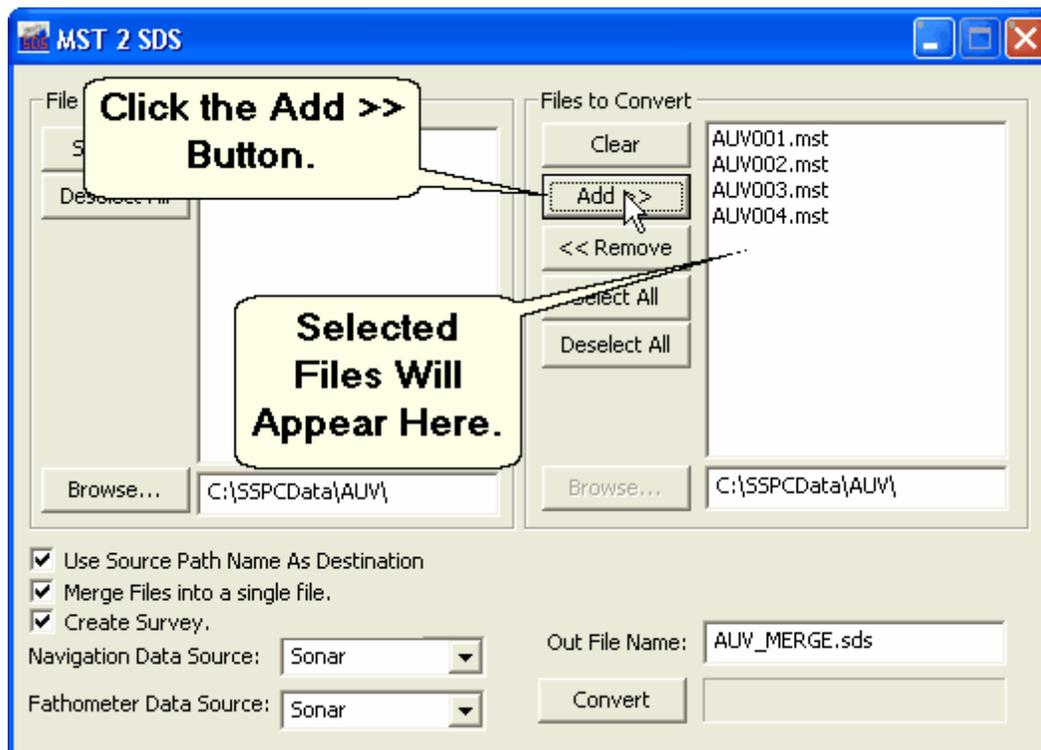
Using the Select a Folder window will allow you to select a folder that contains the source .MST files. Multiple files can be selected by clicking on individual files while holding the Ctrl or Shift key. If no files are selected then clicking the Open button will cause this window close and the current folder will become the source path (folder). This will cause any .MST files to be listed in the Files List box. If at least one file is selected then clicking the Open button will cause the window to close and the selected file(s) will be shown in the Files List box.

For this example we would like to select all of the files in the Source Path to convert. We do this by clicking the Select All button in the File List section.

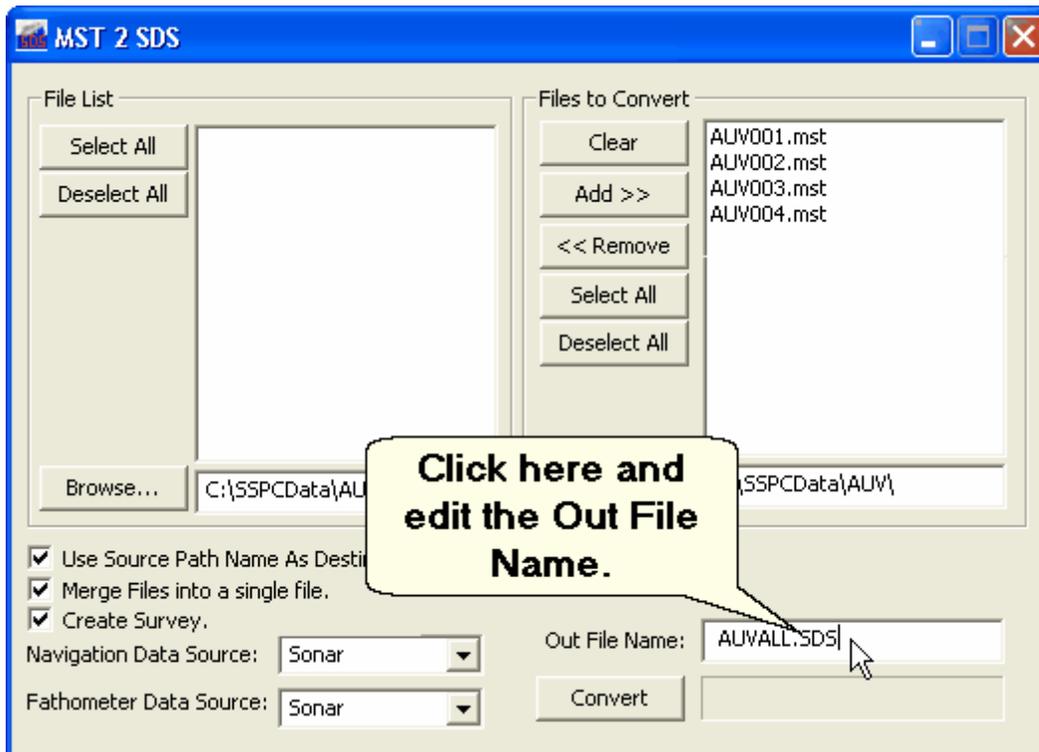


All of the files will be selected as shown above.

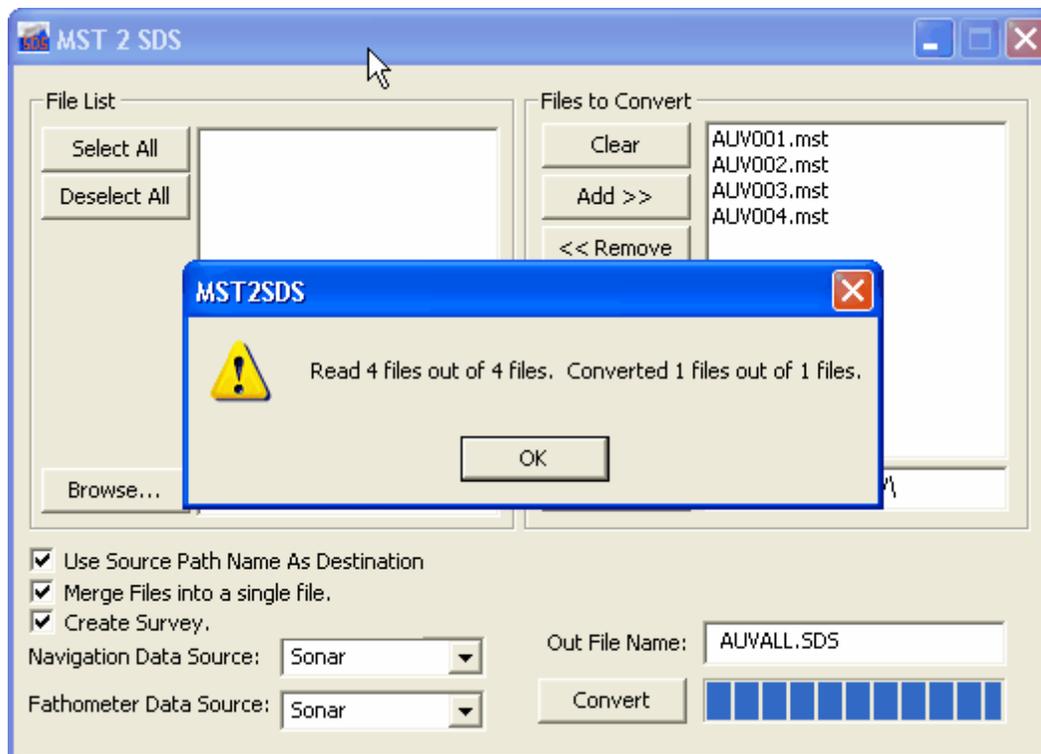
The next step in the conversion process is to transfer all of the files from the File List to the Files to Convert list box. Since we have selected all of the files we simply need to click on the Add >> button.



Once the files are transferred to the File to Convert list box, we simply need to make sure all of the File Conversion Options are set correctly for our conversion. Since we have the Merge Files check box checked, the Out File name is automatically chosen for us. For this example we will change the automatically chosen output file name to AUVALL.SDS. To do this simply click in the Out File Name text box and use the keyboard to change the name.



Now that we have all of our options in place we just need to click the Convert button. Once the conversion has completed a window will pop and show the results of the conversion process.



The results window shows that there were 4 files total to process and that all 4 files were read correctly. It also shows that there was 1 file to be converted and that it was converted successfully. There was only 1 file to be converted because we chose to Merge Files. If we had unchecked the Merge Files check box, the results window would have read Converted 4 files out of 4 files. To close the results window click the OK button.

# Section 5

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- **Details on MSTIFF Data Used**

## 5 Details on MSTIFF Data Used

In the introduction, it is mentioned that the MST2SDS software will convert MST files recorded by Sea Scan PC V1.6.13 and higher. This is because it supports only newer MSTIFF data. Below is a list of MSTIFF tags used by the MST2SDS software:

```
MSTIFF_TAG_TIMECORRELATION
MSTIFF_TAG_SONARLINES
MSTIFF_TAG_BINSPERCHANNEL
MSTIFF_TAG_SONARDATAINFO3
MSTIFF_TAG_LEFTCHANNEL2
MSTIFF_TAG_RIGHTCHANNEL2
MSTIFF_TAG_NAVINFO6
MSTIFF_TAG_FATHO2
```

The MST2SDS converter takes care of merging all of these types of data and corrects for overlap in the Sonar Data, Navigation Data, and Fathometer Data. For more information on these data types please see the [MSTIFF - MSTL Image Data File Format](#) document available for download from the Marine Sonic Technology web site.

# Section 6

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- **Software History**

## 6 Software History

This sections contains the history of the MST2SDS software revisions:

### V2.2.0 - September 2015

- Fixed the single side sonar data conversion.
- Revamped the About window.

### V2.1.0 - June 2013

- Corrected the Depth conversion. It was previously incorrectly converted as Total Water Depth and not Sensor Depth.

### V2.0.0 - June 2013

- Added a command line only mode. This allows the MST2SDS software to be completely operated from the Windows command prompt.

### V1.1.1 - April 2013

- Fixed a bug where the software would not convert V1.7 and higher files.

### V1.1.0 - April 2013

- Fixed crashing when attempting to convert older .MST files (older than 1.6.9 - older files are not supported - use Sea Scan PC Review to convert them to newer files).

### V1.0.0 - February 2012

- Initial Version