

Chapter 7

Transferring Survey Data

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7. Transferring Survey Data

After the survey data has been collected with a data collector, it is then transferred to a desktop computer or laptop. The survey data is then archived where it will be reviewed and edited (if necessary) before it is included in the project mapping files.

A. Connecting to the Data Collector

Each Trimble data collector is supplied with a USB connection cable. This cable enables the data collector to connect to a computer or laptop.



Figure 7-1. Data collector and computer connection.

Once the cable is connected to the USB port on the computer, the data collector is turned on. Data may then be transferred in either direction. Files containing information necessary for data collection may be sent to the data collector. Survey files on the data collector (i.e. jobs) may be sent to the computer. This data exchange is accomplished with Trimble Data Transfer. The Data Transfer software is available to download from the Trimble website.

B. Trimble Data Transfer

When the USB cable connects the data collector and the computer, the *Windows Mobile Device Center* screen will be automatically displayed. If the screen as shown in Figure 7-2 is not displayed, the Windows Mobile Device Center will need to be downloaded from Microsoft.

Note: If using an operating system older than Windows 7, ActiveSync may be used to transfer data.



Figure 7-2. Window Mobile Device Center.

To begin transferring data, double-click on the Trimble desktop icon.

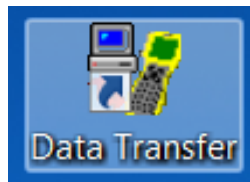


Figure 7-3. Data Transfer icon.

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Use the drop down menu (small red oval) to select *Survey Controller on ActiveSync*. Click on the connect button (green check mark indicated by the red arrow). Next, verify that the device is connected to the survey controller (as indicated by the large red oval).

Note: Even though Windows mobile is being used, the Trimble Data Transfer tool still displays ActiveSync in its *Device* menu.



Figure 7-4. Trimble Data Transfer.

C. Transferring Files to the Data Collector

The default tab selection in the *Data Transfer* window is *Receive*. Click on the *Send* tab (red arrow) to transfer data files to the data collector.

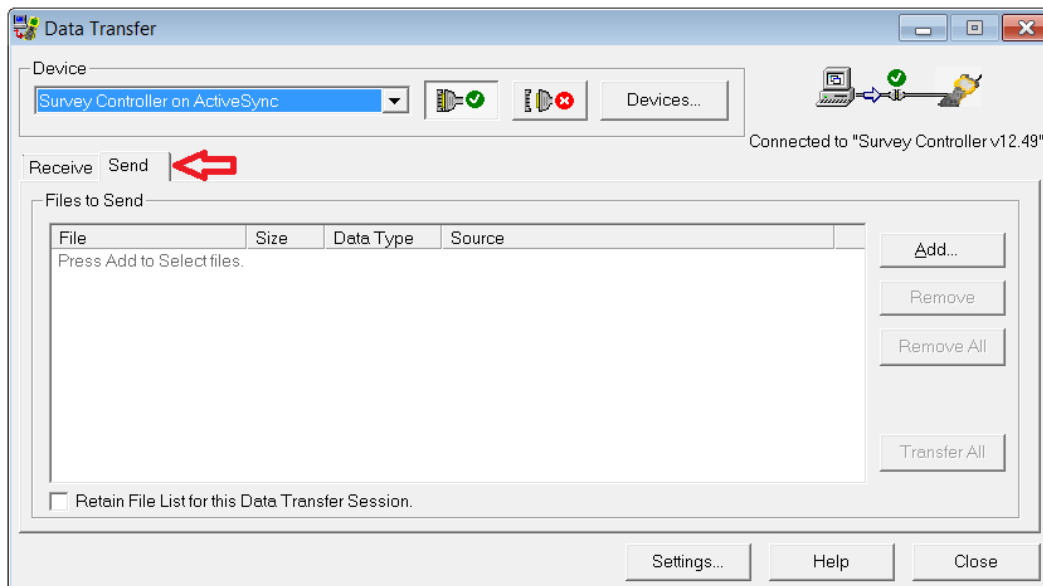


Figure 7-5. Data Transfer (Send) window.

Next, click on the *Add* button.

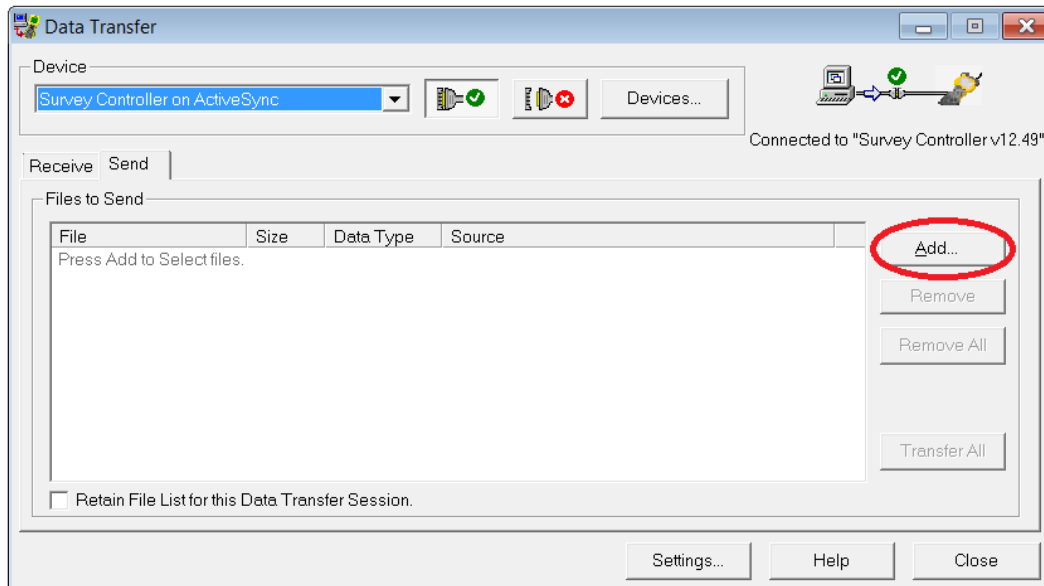


Figure 7-6. Add files to Data Transfer.

In the *Open* window, path to the file(s) to be sent to the data collector. Highlight each file and click on the *Select* button (red arrow).

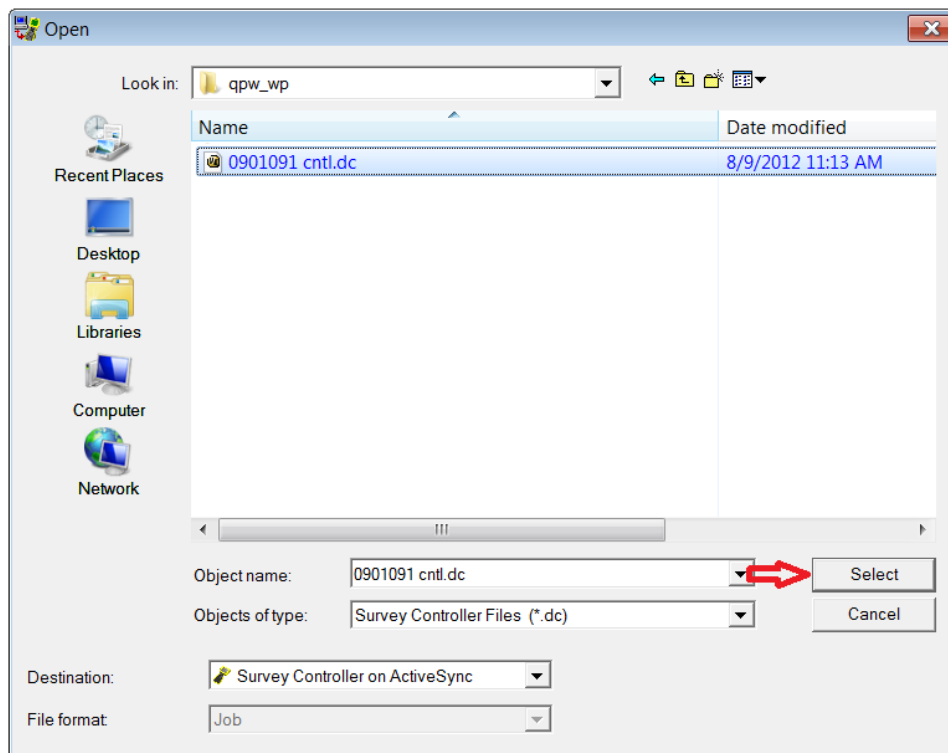


Figure 7-7. Select file(s) to transfer.

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After the file has been selected, highlight each one as shown in Figure 7-8 and click on the *Transfer All* button (red oval).

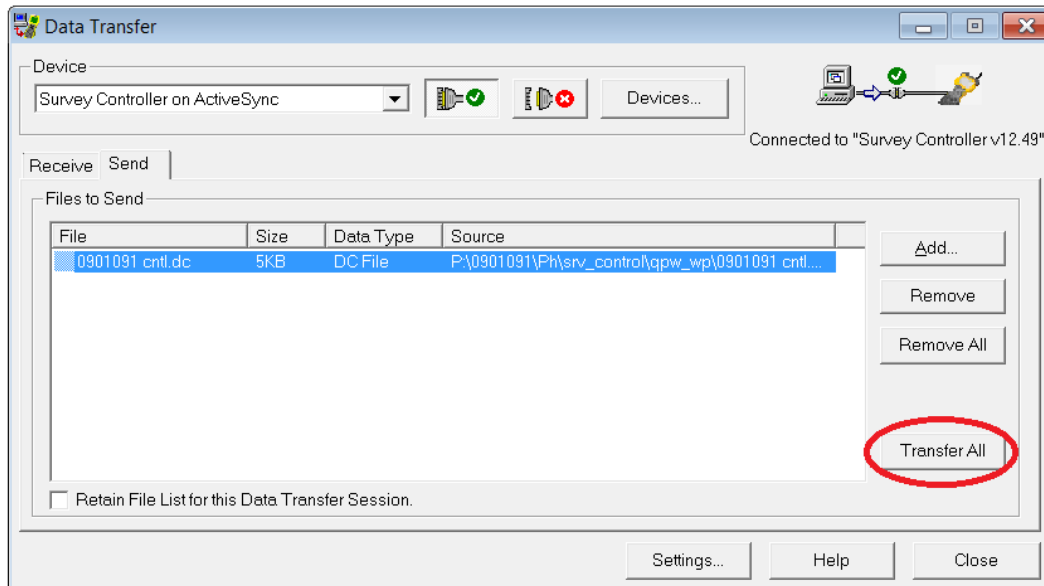


Figure 7-8. Transfer files(s).

After the file has been transferred to the data collector, the *Transfer Completed* window will be displayed as shown in Figure 7-9. Click on the *Close* button.

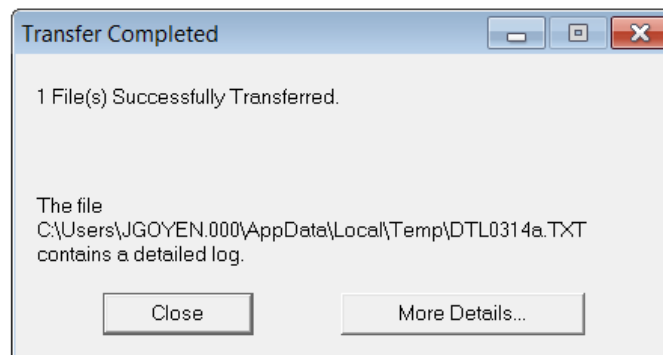


Figure 7-9. Successful transfer.

Many types of files are transferred to the data collector. The most common files for preliminary survey collections are project control files, feature code lists, and DXF graphic files.

1. Project Control File

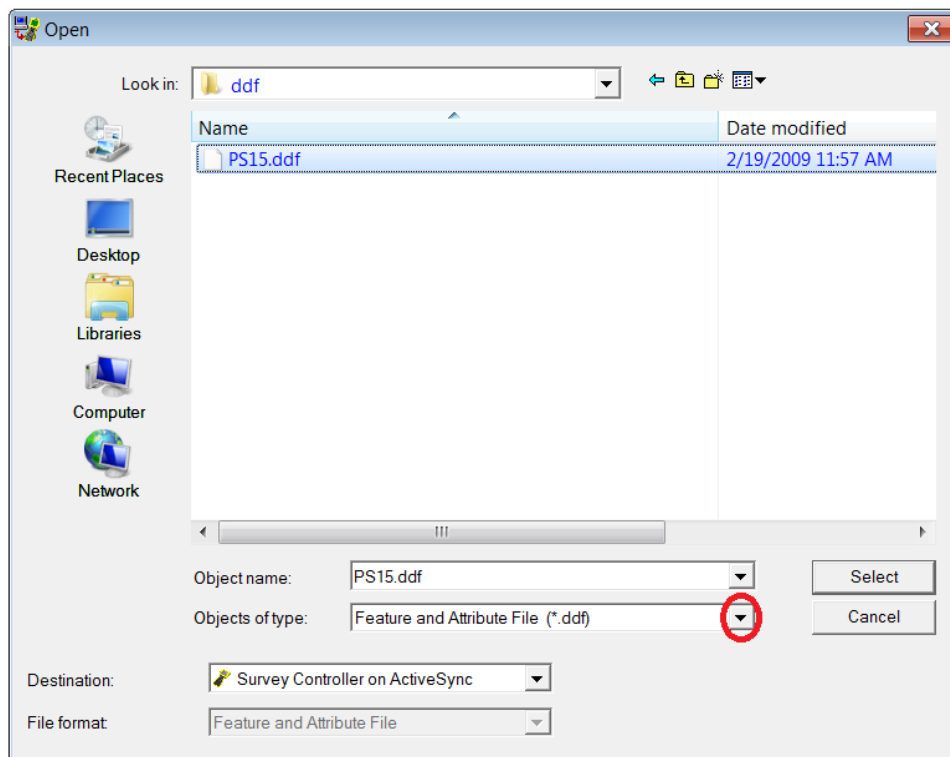
Project control files typically have a ".dc" file extension (see Figure 7-7). These files are generated by the Photogrammetry & Surveys Section (P&S). Should any problems occur while loading these types of files, contact the State Photogrammetry & Surveys Engineer for assistance.

Preliminary survey collection should always use the project control files received from P&S whenever available. Refer to Chapter 6 in this manual for more information on the project control file.

2. Feature Code List

Because feature code lists are periodically updated, it is important to choose the appropriate feature code list. Contact the State Photogrammetry & Surveys Engineer to determine the current list. The feature code list has a ".ddf" file extension and is a binary file that cannot be read with a text editor. Future updated feature code lists will have a new file name but retain the ".ddf" file extension.

At the *Open* window, use the *Objects of type* drop down menu to select the *Feature and Attribute File (*.ddf)* as indicated by the red oval in Figure 7-10. Next, click on the *Select* button.



*Figure 7-10. Selecting the *.ddf file.*

After the file has been selected, highlight the file as shown in Figure 7-8 and click on the *Transfer All* button.

3. DXF Files

Drawing eXchange Format (DXF) is a CADD file that may be created from a MicroStation design file. The DXF file may be used to represent a graphical image to assist the surveyor in identifying specific void areas or survey limits.

At the *Open* window, use the *Objects of type* drop down menu to select the *Background Map File (*.dxf)*. Next, click on the *Select* button.

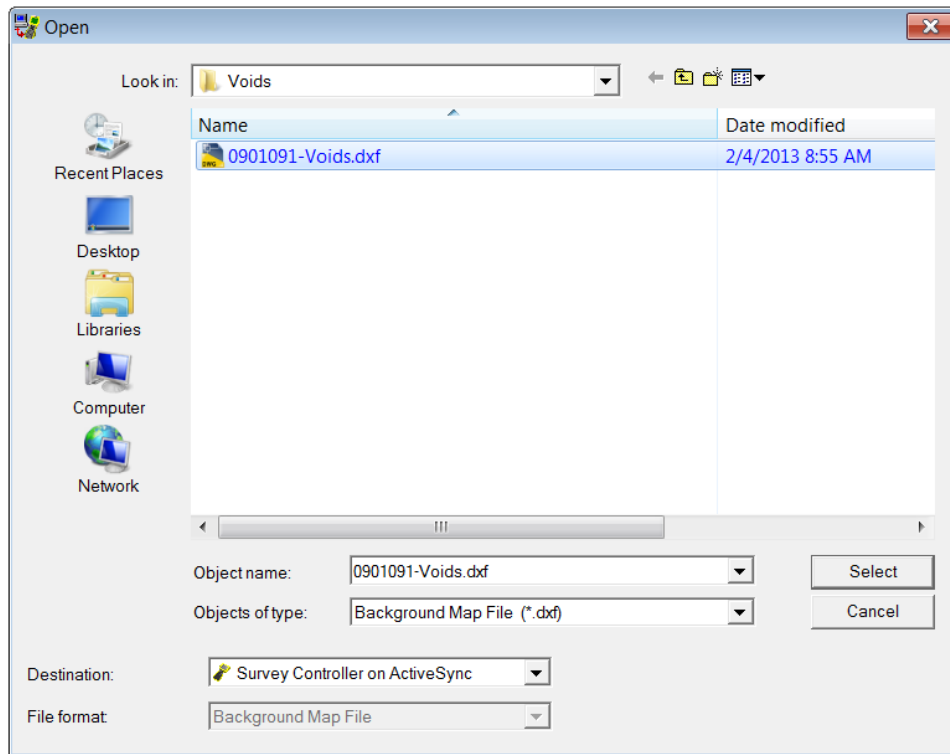


Figure 7-11. Selecting the *.dxf file.

After the file has been selected, highlight the file as shown in Figure 7-8 and click on the *Transfer All* button.

D. Transferring Files from the Data Collector

At the *Data Transfer* window, leave the default tab set to *Receive* as indicated by the red arrow in Figure 7-12. Next, click on the *Settings* button (red oval).

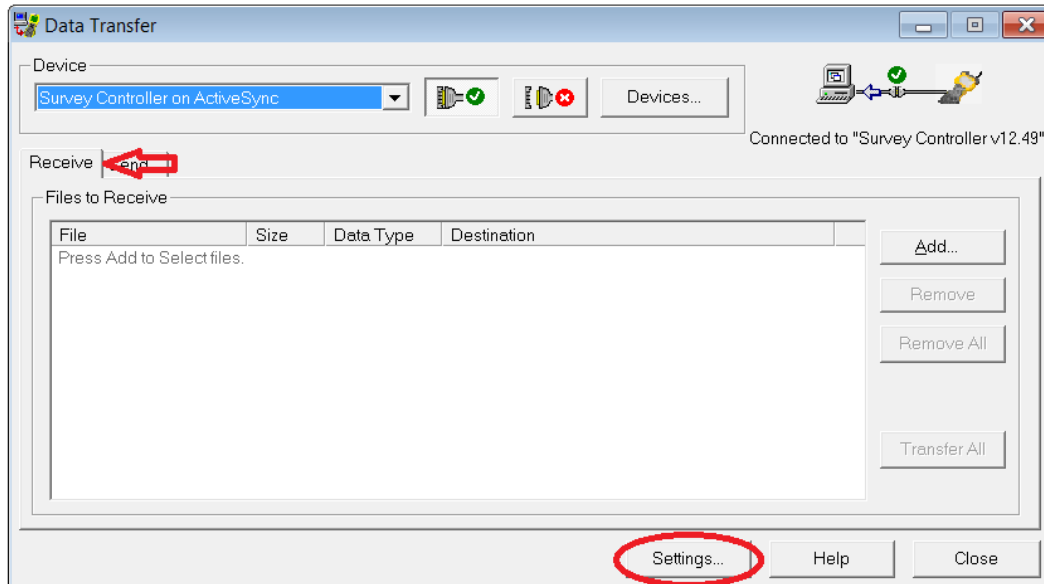


Figure 7-12. Data Transfer (Receive) window.

Verify that the *Query file overwrites* and *Make backup copies of data files* options are checked as shown in Figure 7-13. Do not check the *Delete files on device after transfer* option. Click the *OK* button to save these settings.

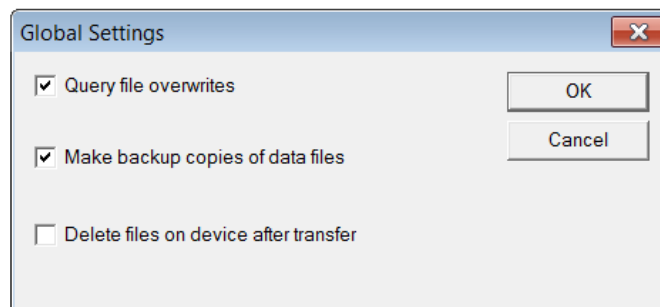


Figure 7-13. Global Settings window.

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At the *Data Transfer* window, click on the *Add* button (red oval) to select the file(s) to be transferred to the data collector.

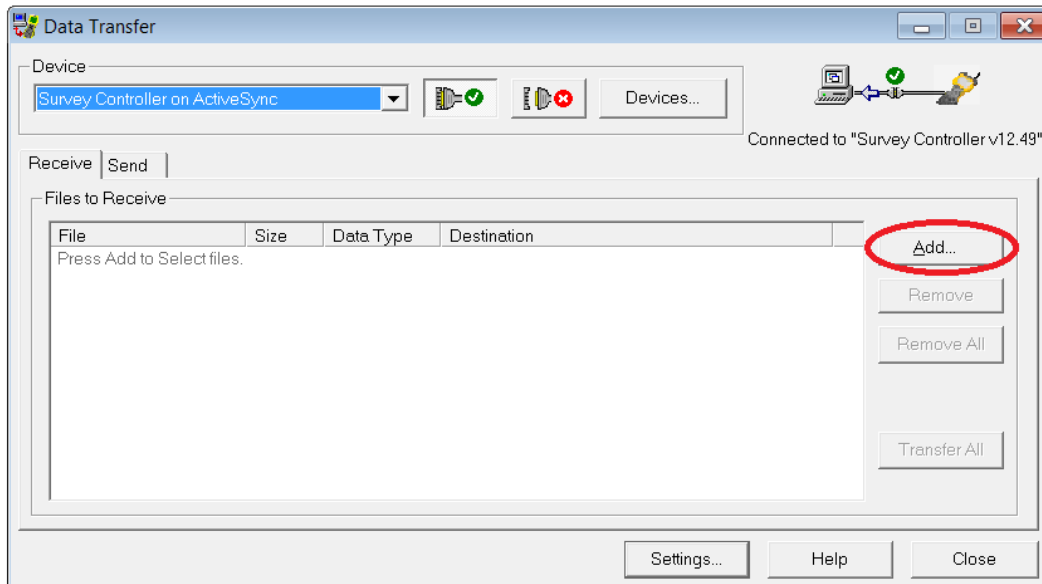


Figure 7-14. Add files to the Data Transfer.

Highlight the file(s) to be transferred (as indicated by the red 1), then set the *File format* field to *DC File v10.7* (red 2). Next, click on the *Browse* button (red 3) to select the location where the survey file(s) will be transferred to. When complete, click on the *Open* button (red 4).

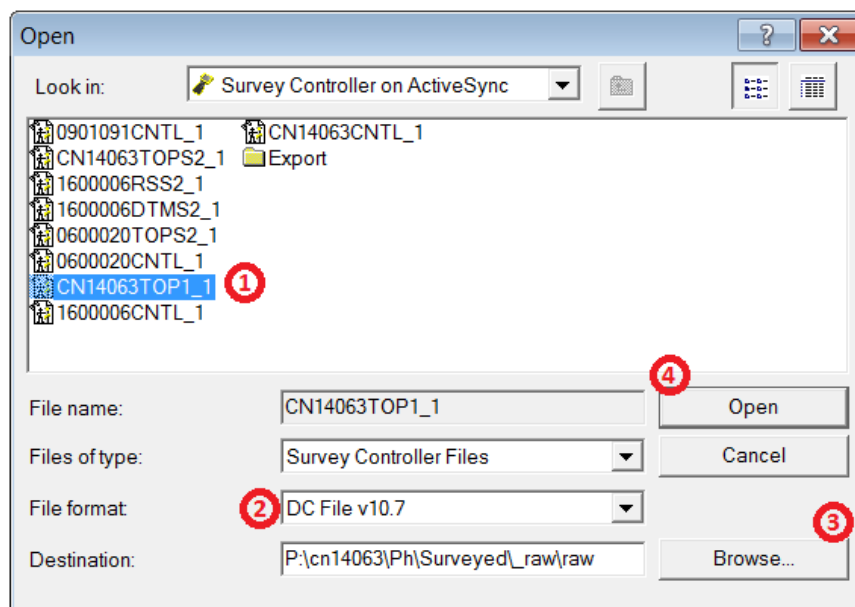


Figure 7-15. Survey file selected.

After the file has been selected, highlight the file as shown in Figure 7-8 and click on the *Transfer All* button. If another file needs to be transferred to a different location, repeat the above steps.

When transferring a survey file from the data collector to a computer, Data Transfer places two files in the destination folder. These files will have the same name as the job on the data collector, but will have file extensions of ".dc" and ".job."

Any other transfer of the same survey job into the same folder will overwrite the *.dc and *.job files. When the *Query file overwrites* option is checked in the *Global Setting* window, a Data Transfer message will be displayed before any files are overwritten. Clicking the *Yes* button will overwrite the files, clicking the *No* button will cancel the transfer.

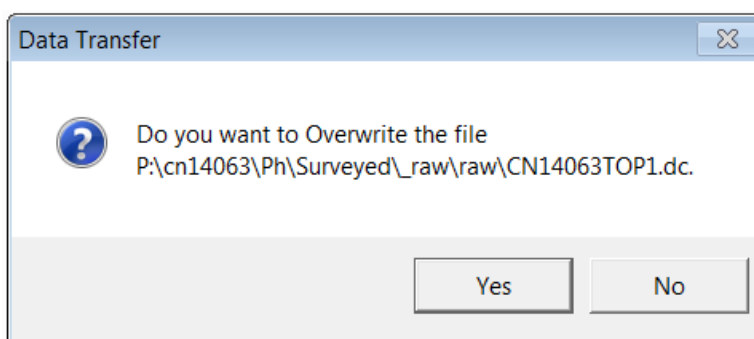


Figure 7-16. Overwrite option.

E. Transferring Data with Windows Explorer

Survey data jobs may also be transferred between the data collector and a computer using Windows Explorer. Files transferred in this manner are not converted to another format. The main purpose for this method is to transfer *.job files from one data collector to another. This may be necessary if a data collector is being sent in for maintenance or repairs. The *.job files can then be transferred to another data collector to complete the survey collection. The data collector is connected to the computer using Window Mobile Device as previously described. It is not necessary to open Data Transfer. This method of transferring files is **only** recommended for transferring the *.job files. It is not possible to use this method to transfer *.dc files.

Transferring Survey Data

Using Windows Explorer, locate the *Portable Devices* section (red arrow) in Figure 7-17.

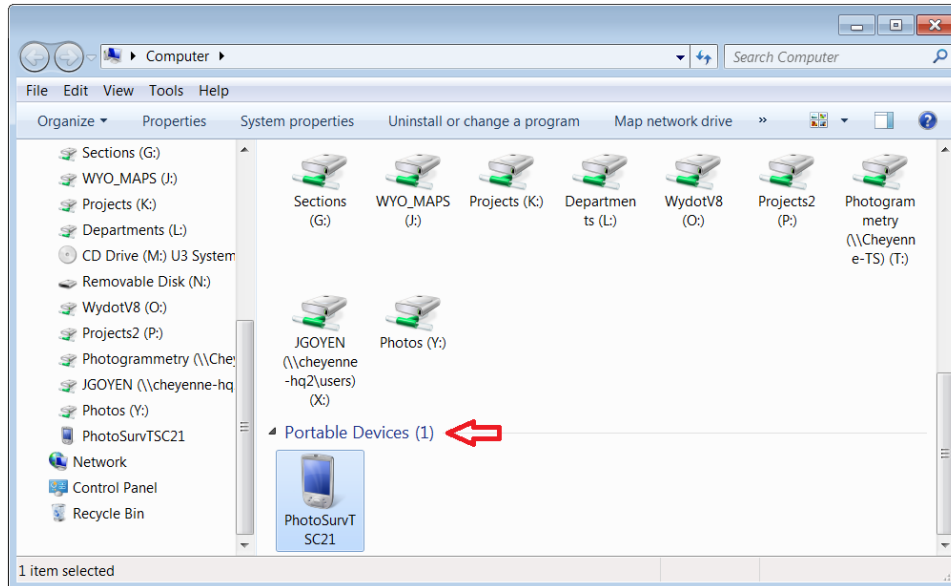


Figure 7-17. Portable Devices.

Next, locate the *Trimble Data* folder (red oval) on the data collector. Files can be transferred using either the "drag and drop" or "copy and paste" method. Copy the *.job file(s) as indicated by the red arrow from the first data collector to the computer in a designated folder. Connect the second data collector to the collector and copy the *.job file(s) to that data collector using the same technique.

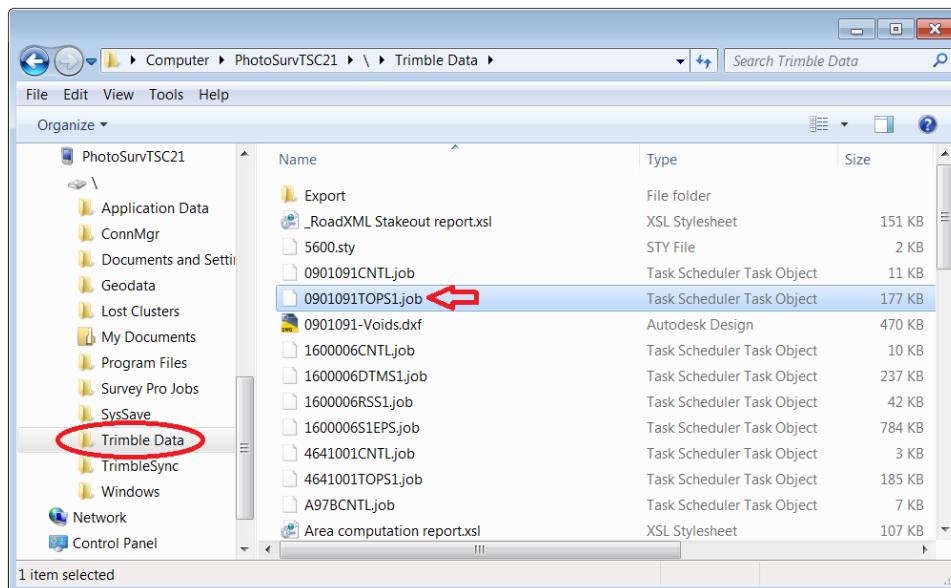


Figure 7-18. Data collector folder.

Note: The file path as shown in the Figure 7-18 is unique to Window 7, if using another operating system the path may be slightly different.

F. Editing Survey Data

Before submitting survey files to P&S, a plot of the survey should be carefully reviewed. This is accomplished by importing and visualizing the survey into a MicroStation design file using Geopak Survey. The best error correction occurs when it is reviewed by the survey personnel shortly after it has been completed. Refer to Chapter 8 in this manual for more information on reviewing and editing survey data.

1. Editing Tools

One of the most important editing tools is an ASCII text editor. An ASCII text editor is not the same as WordPerfect, Microsoft Word, or any other word processor. A text editor keeps characters aligned in fixed-width columns without changing the file format. Two recommended text editors are Programmer's File Editor (PFE) and Ultra Edit. For more information about these programs, contact the WYDOT District IT coordinator.

2. Editing Known Errors and Blunders

When entering notes in a field book or data collector, make a reference to the specific shot number(s) to be edited. For example, "change shot 1452 from EUR to EUD" or "delete shot 1655." These notes may become separated from the specific measurement depending on when the note was entered and when the shot was taken.

When a note is entered in the data collector, it is important that clear and concise editing instructions are included. Finish each line with the necessary information to describe the following:

- What has been edited.
- When was it was edited.
- Who did the editing.

This type of editing should be completed before attempting to process the edited survey data with Geopak Survey.

G. Reviewing Edited Data

Any editing of the survey data file must be correct and complete. The editing may be checked by reviewing the data file itself. Compare the raw file with the edited file to verify that the proper changes have been made.

The editing can then be further reviewed by importing the file into MicroStation. Each time a data file is edited, rename the edited file with a unique name. This method can be used to keep track of which editing changes worked and which did not. Always follow the naming conventions for edited files sent to P&S. Refer to Chapter 6 in this manual for the file naming convention.

When an edited measurement file is loaded onto the data collector, it is converted to a coordinate file. Loading the *.job file via Windows Explorer is the only method to transfer a measurement file back to the data collector.

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H. Saving Edited Data

Once the survey data file has been edited and saved, send the survey to the State Photogrammetry & Surveys Engineer. The files submitted to P&S should include copies of the *.dc, *.job, and *.edt files. Refer to Chapter 10 in this manual for further instructions on submitting survey data to P&S.