DigTrace *Importer*

User Manual

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www.digtrace.co.uk

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1.0 Introduction

DigTrace *Importer* is a single-function programme that allows you to organise and import to a spreadsheet multiple landmark files generated by DigTrace (Fig. 1).

DigTrace is an integrated software solution for the capture and analysis of 3D data whether in a forensic context (footwear evidence) or in the study of vertebrate tracks and footprints. It caters for everything from the study of dinosaur footprints to the analysis of footwear evidence at a crime scene. DigTrace *Importer* is designed specifically for use with PAST (http://folk.uio.no/ohammer/past/) which is a fantastic freeware statistical package that provides access to both basic and advanced statistical tools relevant to the study of 3D landmark data. PAST requires data to be structured such that one specimen equals one row with coordinate or distance data in columns. If you need data in other formats, then it can be manipulated in Microsoft Excel.

When using the landmark placement tool within the Measure workbench of DigTrace it is possible to export three data files: (1) a screenshot showing the placement of the landmarks; (2) a csv file with the landmark coordinates in it; and (3) a csv file with the inter-landmark distances. If you have a large number of tracks to study you may generate a large number of these files. Importer

provides and automated way of compiling the files into a single spread sheet.
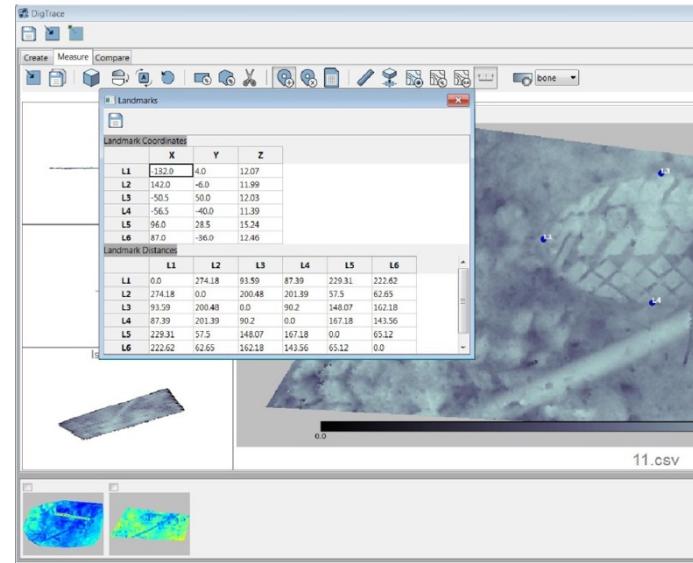

Figure 1: Measure workbench in DigTrace showing the export landmark option. By pressing the save button in the pop-up window the data is exported as two csv files one for landmark coordinates and for inter-landmark distances.

2.0 Installation

To install the software, go to http://www.digtrace.co.uk/downloads/ and select the appropriate version. Once downloaded unzip the file and run Importer.exe.

3.0 Operation

Let us imagine that you are comparing multiple tracks in DigTrace via the placement of a series of landmarks. On each track, you will place the same landmarks and then export the files as normal. Three files are produced, two csv files and one jpeg, the files are: one with the xyz coordinates of each placed landmark; one with the inter-landmark distances; and an image file showing the placed landmarks on the track. If you process multiple tracks in this way you will end up with a directory similar to that shown in Figure 2.
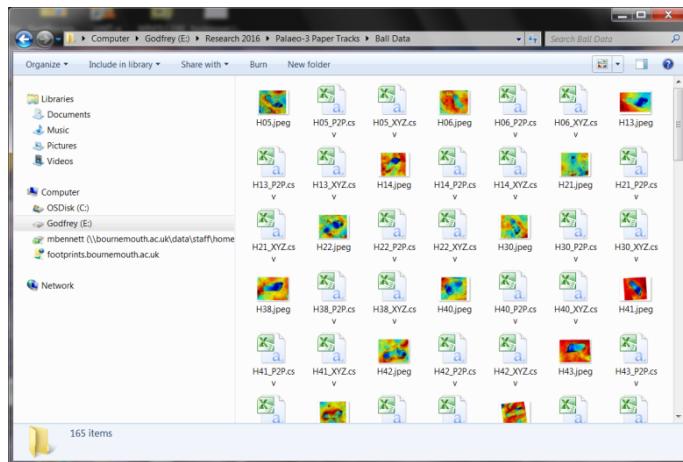
Figure 2: Screenshot of a typical directory/folder with landmark output files from DigTrace.

We recommend that you place all these files in the same directory, for example one labelled: 'landmark_outputs_project_[insert name]'.

Open DigTrace *Importer* and after a moment a window similar to that in Figure 3 should appear.
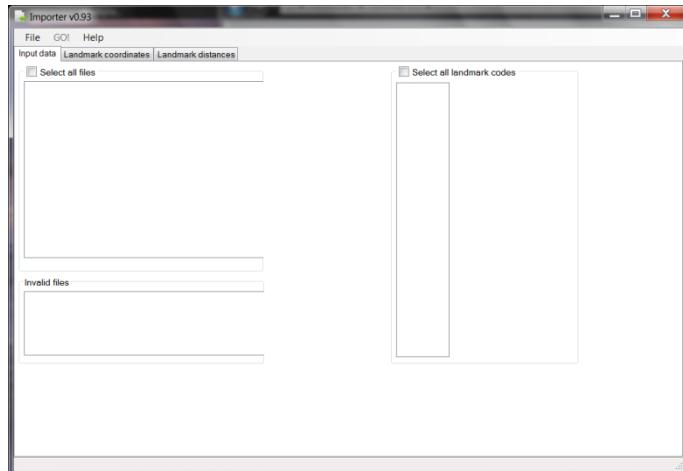

Figure 3: DigTrace Importer window.

Use File > Open folder to navigate to and then select the directory/folder in which your landmark csv files are stored for the project in hand. Once appropriate folder selected press ok. It does not matter if there are other file types present the programme will only recognise those with a csv suffix. It does not matter what the file names are. Once the relevant directory has been identified the windows will be populated as shown in Figure 4. You can now select the files you want and the landmarks you wish to be included in the spreadsheet. The csv files need to have the specific formats shown in Tables 1 and 2 to be recognised; this is the standard output from DigTrace.

If the csv files have a different format and are therefore not recognised by the software they will appear in the 'invalid files' window and will be ignored. If files that you want to be included appear in the 'invalid files' window check their format and ensure that it matches that in Tables 1 and 2.
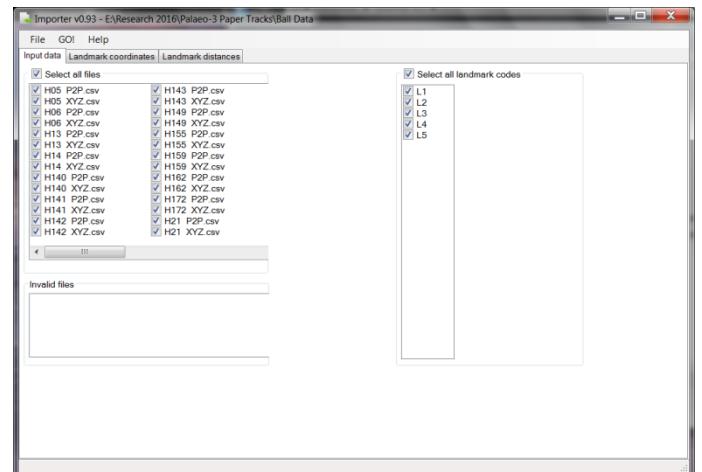

Figure 4: Once you have selected a directory with csv files in the correct format the window will look like this.

POINT_ID	X	Y	Z
L1	3.835852	82.34019	-0.8246
L2	78.93236	-90.7587	-0.5320
L3	98.27656	-27.0569	-1.3009
L4	33.96089	-55.9778	-0.2057
L5	75.94884	-39.9206	-11.11

Table 1: Format for the landmark coordinate files.

UID	L1	L2	L3	L4	L5
L1	0	188.68	144.52	141.56	142.31
L2	188.68	0	66.578	56.852	52.013
L3	144.52	66.57	0	70.527	27.5738
L4	141.561	56.8528	70.5274	0	46.2583
L5	142.31	52.013	27.573	46.258	0

Table 2: Format for the inter-landmark distance files.

Figure 5: Imported data displayed within DigTrace Importer. This can be saved as a csv file.

When you have the files and landmarks correctly identified press Go! The window under coordinates and landmarks will now be populated as shown in Figure 5. You can save these output files as csv files which open in a range of worksheet based software such as Microsoft Excel. If you wish to import them into PAST first open them in Excel and copy and paste the data into an open PAST worksheet.