

Preparing a Point Cloud for Civil 3D – Part 1

ReCap Pro

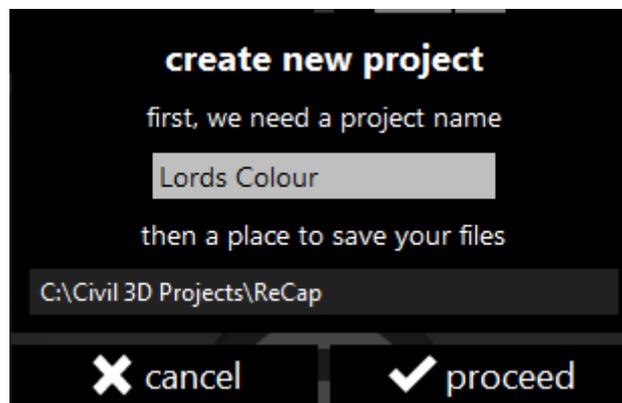
Introduction

2015 saw some great changes to the functionality and behaviour of Point Clouds across all of Autodesk's product range. This new workflow is heavily centered around ReCap Pro, Autodesk's dedicated desktop Reality Capture software. This white paper is part 1 of a 3 part series in which I will be covering the full workflow for creating a surface from point cloud data. Part 1 focuses solely on the preparation of the point cloud in ReCap for use in Civil 3D, part 2 looks further at the preparation process including removing noise or unwanted areas while part 3 will cover the surface creation process in Civil 3D.

About the Import Process

Upon opening ReCap we are presented with a fairly simplistic welcome screen. In the upper left hand corner is the *New Project* button, this is where we'll start our journey. Having selected the *New Project* button we are presented with a dialog box requesting the project name and a file saving location as shown in fig. 1 below, the project name is typed in the dialog while the save location can be changed by placing a click on it.

Fig. 1



When we are happy with the details entered we can choose Proceed. We are now presented with the screen shown in fig. 2 where we can select files or folders to import, for ease and speed if registering a number of scans we can also drag items into the application window from windows explorer. When the first file has been added the screen changes to display files that have been selected to be indexed in this project. We are still free to drag additional files into the application window or alternatively use the plus and folder icons that have been relocated to the left hand side of the screen as shown in fig. 3. When we have selected all of the files we would like to index in this project we can proceed to the next step. If we would like to filter the data or modify any scanner related settings we can do so by selecting the scanner icon in the top right of the screen as shown in fig. 3, alternatively we can choose to skip straight to the indexing process by selecting the rocket icon in the top right corner or the blue index scans button at the bottom right corner of the screen.

Fig. 2

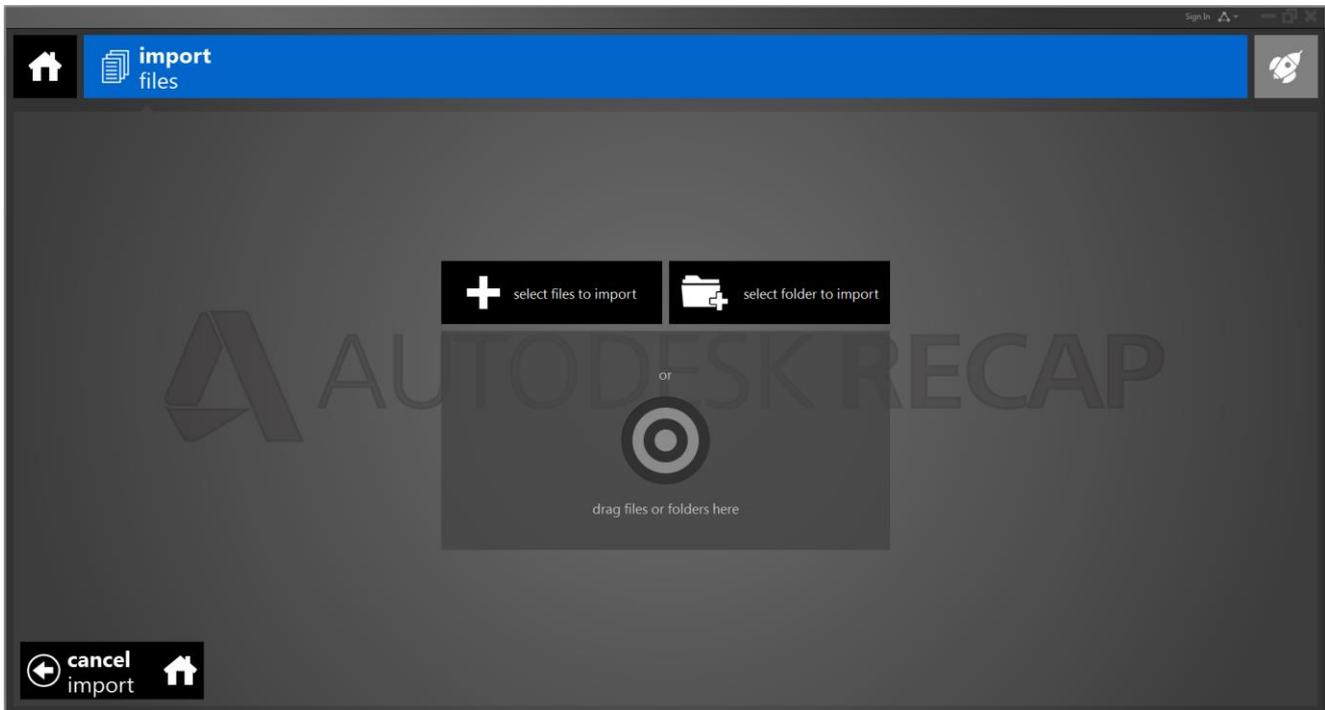
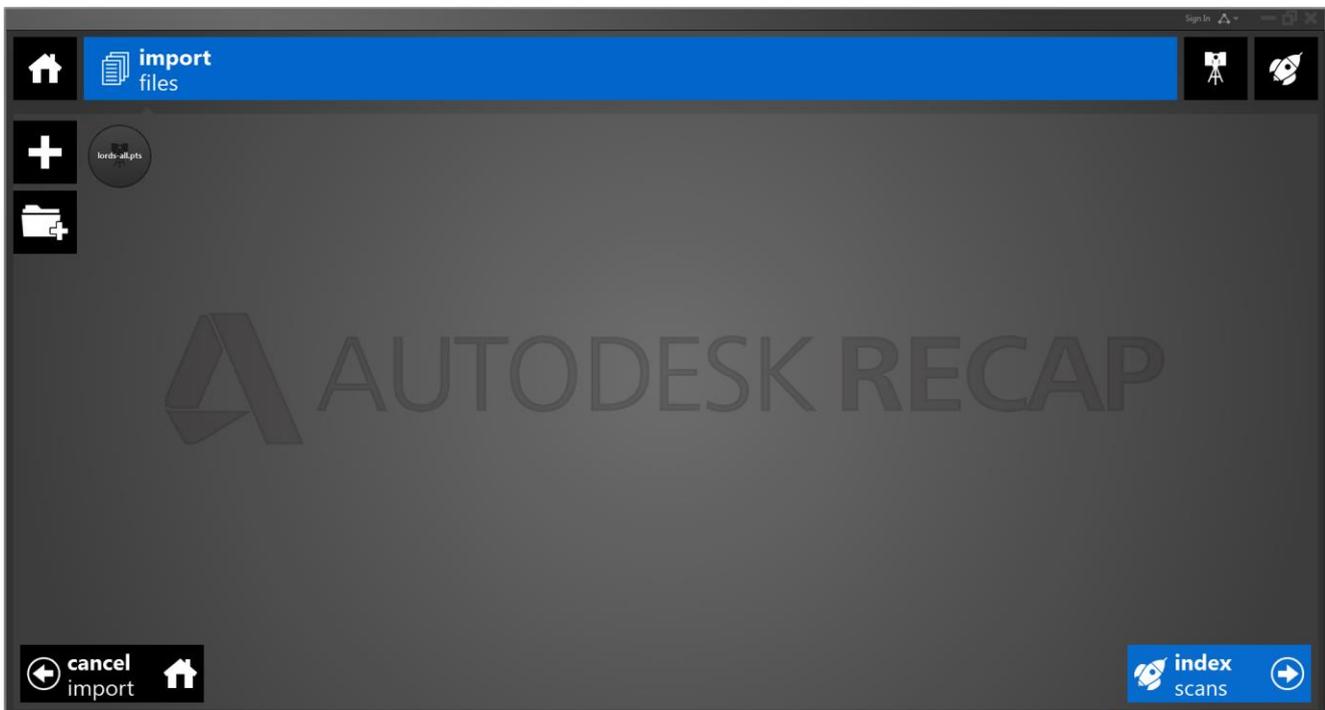
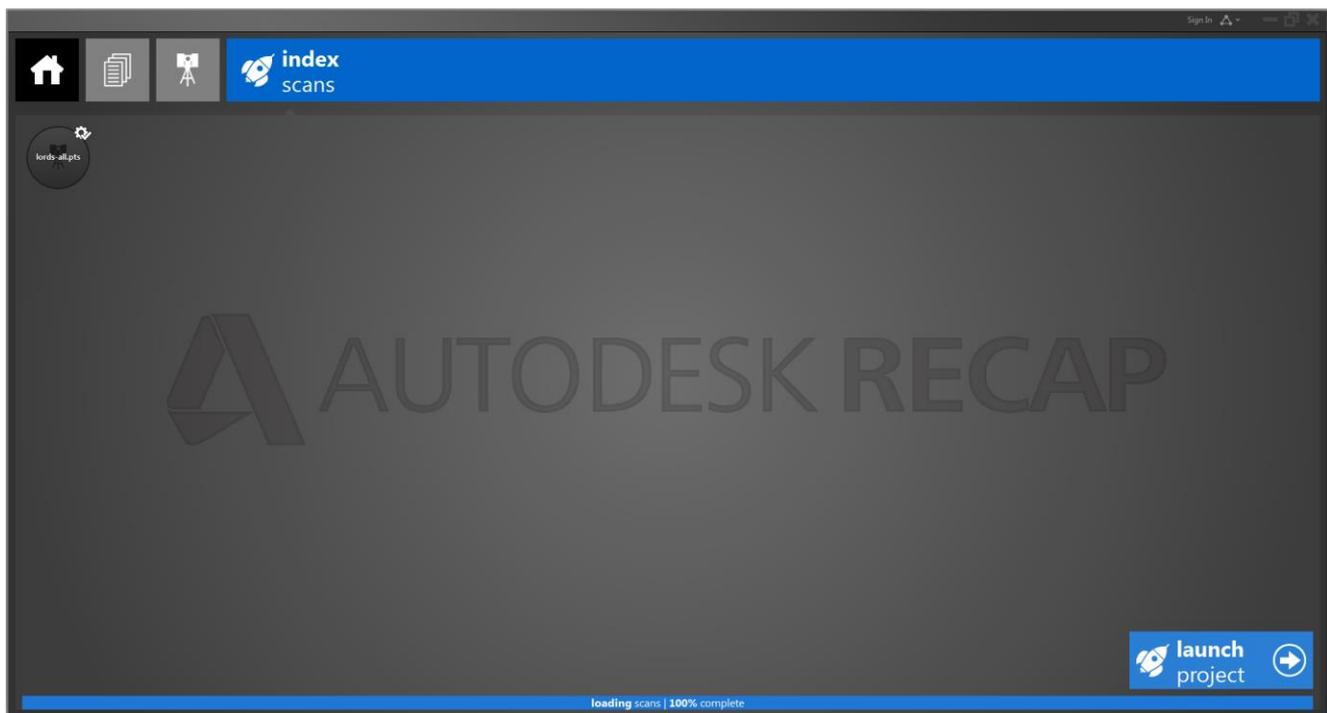


Fig. 3



Having asked the software to index the scans another screen will be displayed as shown in fig. 4. A status bar at the bottom of the screen reports the total progress indexing the scans. A cogwheel symbol will appear on the name of any scans that are still processing. Once a scan has been indexed the cogwheel symbol will move to the upper right corner of the scans symbol and will gain a tick mark indicating that it is complete. During this process an rcp file is created for the project and an rcs for each scan file you loaded into the project, these are saved in the location you specified when initially creating the project.

Fig. 4



When all the scan files have been indexed we can launch the project with the button shown in the bottom right corner. Additionally all of the files required to load the data into Civil 3D have been created. However, you may wish to remove some of the data that is not relevant to you or your project. I'm going to leave you with the home view of the scan I just processed, don't forget to check out Preparing a Point Cloud for Civil 3D – Part 2 for a look at how we can further process the scan.

