



Project Indexer

Description:

The ProjectIndexer.exe is a standalone resizable C# Windows Presentation Form application that is fully integrated with Projectwise. This application is available for use externally and internally to ODOT via the ODOTcadd standards.

The application can be found in the following place:

ODOTcadd Standards: ..\ODOTcadd\Standards\ODOT\ProjectTools\ProjectIndexer.exe

Click this [link](#) to watch a How To video on YouTube.

The main purpose of this documentation is to explain how to use the project indexer application.

Software Requirements:

This application was developed using .NET Framework 4.5 in 64bit Windows 10.

Optional Software – Needed to make full use of all features of this application

Microsoft Excel, AutoCAD 2017, Microstation, Projectwise

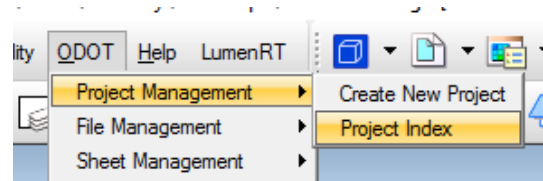
Microsoft Excel 2013 and 2016 both 32bit and 64 bit versions were used to test the application. Note that the application can still be used if Microsoft Excel is not installed but all the features of the application will not be enabled.

This application does not require MicroStation or AutoCAD to be installed to run. However there is additional functionality in the application if these products are installed.

Loading the Application:

This application can be loaded by double clicking on the ProjectIndexer.exe file. It is a standalone application but it can be launched from the ODOT pulldown menu in MicroStation.

ODOT > Project Management > Project Index

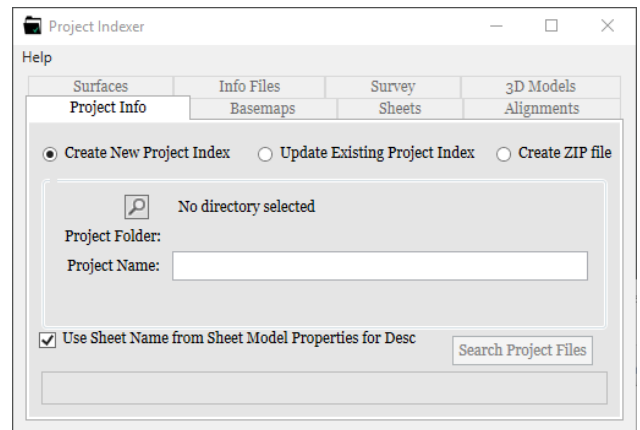




Application Operation:

When loaded the application will look like this.

The Application is comprised of a [Help Menu](#) and 8 tabs. The first tab, [Project Info](#) is the starting point of the application.



Help Menu:

The help menu consists of three items [PDF Doc](#), [How to video](#), and [About](#).

PDF Doc

Clicking this item will launch this document.

How to video

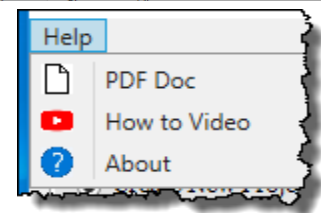
Clicking this item will launch the following link to a YouTube video explaining how to use this application.

<ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/Links/ProjectIndexer.html>

About

Clicking this item will open another dialog, pictured to the right. This dialog displays the following information.

- Application Name and last update date
- Application version
- Copyright
- Company
- Description

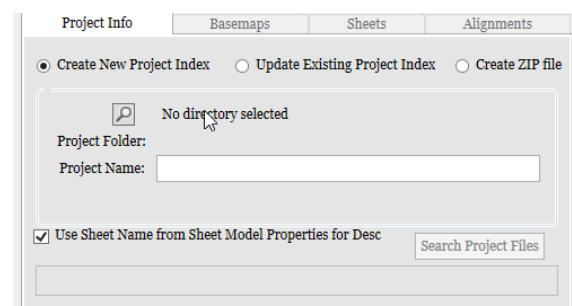


Project Info Tab:

This tab is the starting point for using the application. There are three options to use within this application, [Create New Project Index](#), [Update Existing Project Index](#), and [Create ZIP file](#).

Create New Project Index

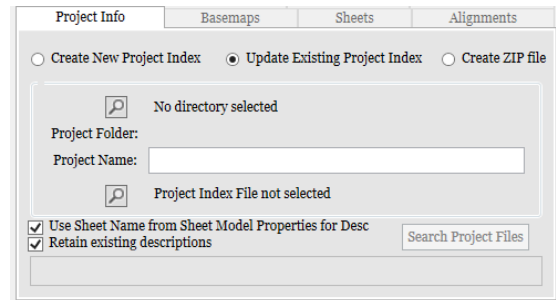
When this option is selected the Project Info tab will look like this. Use this option to create a new project index excel file.





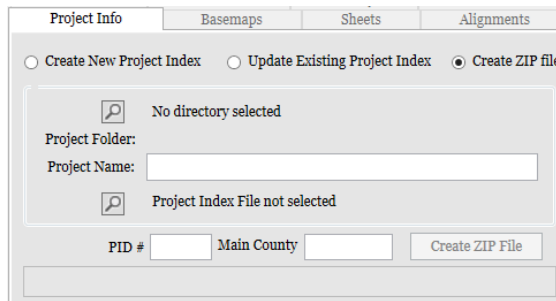
Update Existing Project Index

When this option is selected the Project Info tab will look like this. Use this option to update an existing project index excel file.




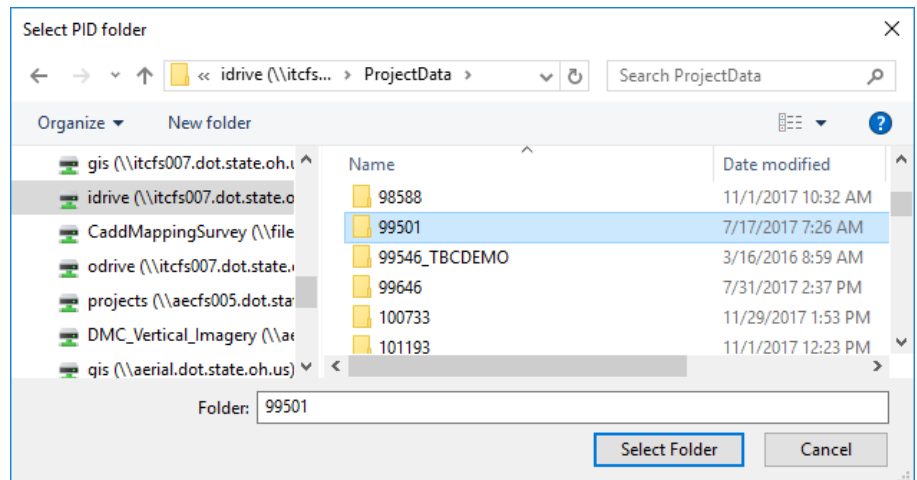
Create ZIP file

When this option is selected the Project Info tab will look like this. Use this option to create a zip file containing all the files listed in an existing project index excel file.



Directory Search Button

This button  when clicked will launch a select folder dialog as shown to the right. The user should select the Projects PID folder that contains the files needing to be indexed on the Project Index excel file.



Project Folder


The Project Folder is filled out once a Project folder has been selected with the [Directory Search Button](#). The value will be the name of the selected folder.

Project Name Textbox

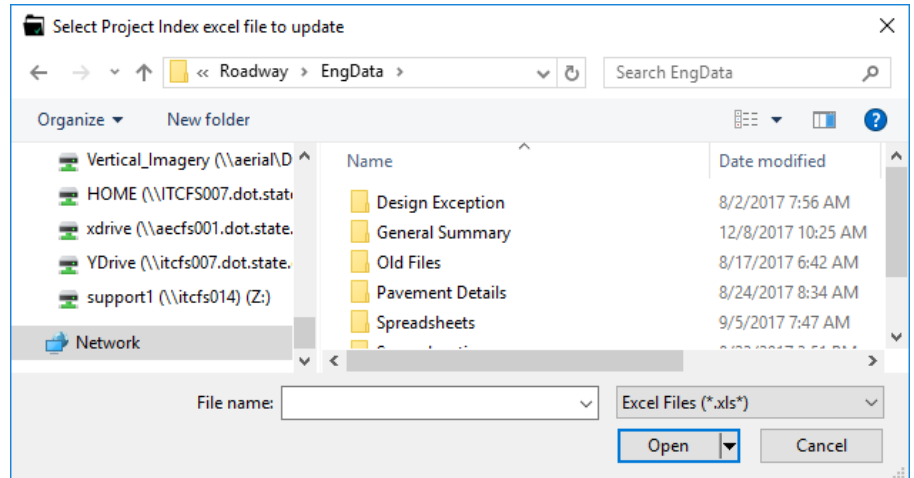
This text box should be filled out with the Projects Name. This is typically in the format of CTY-Route-Section.



Index File Search Button

This button  is only displayed if the [Update Existing Project Index](#) or [Create ZIP file](#) options are selected. Once a select file dialog is opened as shown to the right. Only files with a file extension of .xls* will be displayed. Once selected the excel file directory will be displayed in the Project Info tab.

**Hint: If the Project Index file is selected before the PID folder is selected then the Project Index excel file is opened and searched for the PID folder listed in the excel file. If found then the PID folder directory is filled out.



Use Sheet Name from Sheet Model Properties for Desc checkbox

This checkbox is only shown if the [Create New Project Index](#) or [Update Existing Project Index](#) option is selected. By default this checkbox is checked. If checked then when the [Search Project Files Button](#) is selected the file descriptions for sheet dgn files will use the Sheet Name sheet model property. For exact details of what data is pulled into the application from the Project Index see the [Search Project Files Button](#).

Retain existing descriptions checkbox

This checkbox is only shown if the [Update Existing Project Index](#) option is selected. By default this checkbox is checked. If checked then when the [Search Project Files Button](#) is selected data from the Project Index file is retained and pulled into the application so the user does not lose any work. For exact details of what data is pulled into the application from the Project Index see the [Search Project Files Button](#).

Search Project Files Button

This button will only be shown if the [Create New Project Index](#) or [Update Existing Project Index](#) options are selected. This button will only be enabled (clickable) if the correct conditions have been met. These conditions vary depending on with option the user has selected.

If [Create New Project Index](#) option is selected then this button will be enabled once a [PID directory](#) has been selected.

If [Update Existing Project Index](#) option is selected then this button will be enabled once a [PID directory](#) and [Project Index file](#) have been selected.

Once this button is selected the application will populate the rest of the tabs. Note depending on the size of the project and number of files within the PID folder the run time for this task to run can vary. The [Progress Bar](#) at the bottom of the Project Info tab is used during this step for this reason. The following list describes what the application is doing when this button is selected.

- Starts Progress Bar and captions it “*Searching PID directory...*”.
- Cycle through all files within the Design folder of the Selected PID folder.



- If a .dgn or .dwg file is found inside a folder named Basemaps then that file is added to the basemaps tab. Note if it's a dgn the file's Title and Comments fields are obtained and used for that files description.
- If a .dgn or .dwg file is found inside a folder named Sheets then the following actions happen
 - If the file is a .dgn and MicroStation is installed the file is opened and all Sheet models found within the file are added to the Sheets tab. If the Sheet Number model property is filled out then it is brought into the Sheets tab with the Sheet model as the sheet number. If the Sheet Name model property is filled out and the [Use Sheet Name from Sheet Model Properties for Desc checkbox](#) is checked then it is brought into the sheets tab with the sheet model as the sheet description; if the Sheet Name model property is not filled out then the file's Title and Comments fields are obtained and used for the sheet description.
 - If the file is a .dgn and MicroStation is not installed then the file is added to the sheets tab but the sheet model name will be left blank. The file's Title and Comments fields are obtained and used for the description.
 - If the file is a .dwg and AutoCAD is installed the file is opened and all Paper Spaces found within the file are added to the Sheets tab.
 - If the file is a .dwg and AutoCAD is not installed then the file is added to the sheets tab but the Paper Space Name will be left blank.
- If a .xml file is found within the Design folder then the file is read to determine if it's an Alignment LandXML or Surface LandXML.
 - If the file is an Alignment LandXML then the file is read to find the Horizontal Alignment Name and all profile names found. The Project name and desc if filled out are used for the Alignment Name and Description. the directory at which this alignment is found is also searched for a file with the same name with a different file extension. If one is found this file is assumed to be the report file that goes with this XML file. All this data is then added to the Alignments tab.
Note only one Alignment per file!
 - If the file is a Surface LandXML then the file is searched for the surface name. This file is added to the Surfaces tab and the surface name is used for the description.
- If a .tin file is found then it is added to the Surfaces tab.
- If a .gen file is found then it is added to the Surfaces tab.
- All files found inside EngData folder are added to the Info Files tab.
- If a .icm or .ifc file is found then it is added to the 3D Models tab.
- All .dgn or .dwg files found inside a Survey folder are added to the Survey Tab. The file's Title and Comments fields are obtained and used for that files description if file is a .dgn.
- All .gpk files found are added to the Survey Tab.
- All .xls* files found inside a Survey folder are added to the Survey Tab. This should be the Surveyors Report Excel file.
- After cycling through all files the Progress Bar Caption is updated to "Setting up excel..."
- If Create new Project Index option is selected then a new excel file is created and opened. It is set up with 7 sheets. See Project Index Excel file for more details.
- If Update Existing Project Index option is selected then the index file that was selected is opened and verified. If the excel file is not verified then all the place buttons on the remaining tabs are disabled.



- If the Retain existing descriptions checkbox is checked on then the Progress Bar Caption is updated to “*Pulling in existing file descriptions...*”. All the sheets in the existing project index file are read. Everything listed on the excel sheets is checked to verify the file still exists. If the file exists when various data is brought into the application overwriting the default values obtained in the steps listed above. The follow lists which data is brought into the application.
 - For the CADD Basemaps excel sheet as long as the description value is not blank it is brought in.
 - For the CADD Sheets excel sheet as long as the description value is not blank it is brought in. The Sheet # is brought in only if the sheet number was not found/listed in the file.
 - For the Alignments excel sheet the Alignment Name and Description are brought in as long as their values are not blank. The Horizontal Alignment Type, Existing Profile Name, and Proposed Profile Name values are also brought in.
 - For the Surfaces excel sheet the Surface type is brought in. The Description is also brought in as long as its value is not blank.
 - For the Info Files excel sheet as long as the description value is not blank it is brought in.
 - For the Survey Files excel sheet as long as the description value is not blank it is brought in.
 - For the 3D Models excel sheet as long as the description value is not blank it is brought in.
- The rest of the tabs are enabled.
- Progress Bar stops and caption is updated to “*Process Complete*”.

PID # Textbox

This checkbox is only shown if the [Create ZIP file](#) option is selected. This textbox will fill out (if possible) when a PID folder is selected using the [Directory Search Button](#). This will be used in the zip file name when the [Create ZIP File Button](#) is selected.

Main County Textbox

This checkbox is only shown if the [Create ZIP file](#) option is selected. This textbox will fill out (if possible) when a PID folder is selected using the [Directory Search Button](#). This will be used in the zip file name when the [Create ZIP File Button](#) is selected.

Create ZIP File Button

This button will only be shown if the [Create ZIP file](#) option is selected. This button will only be enabled (clickable) if a [PID directory](#) and [Project Index file](#) have been selected. When selected a zip file will be created in the ProjectAdmin/PlanPackage folder inside the Projects PID folder. The zip file will be named CTY-PID_CADD.zip where the CTY is obtained from the value in the [Main county Textbox](#) (if blank then the value used will be CTY) and where the PID is obtained from the value in the [PID # Textbox](#) (if blank then the value used will be PID). Example zip file name is STA-12345_CADD.zip.

When this button is selected the application will open the Project Index file and all items listed inside the project index file will be added to the zip file as long as the file still exists. The folder structure inside the PID folder is maintained inside the ZIP file.

Since this process could take some time to complete the Progress Bar is used and its caption is set to “*Adding files to ZIP...*”.



Progress Bar

The progress bar is used to display information about the processes the application is doing during the [Search Project Files](#) Button and [Create ZIP File](#) Button.

Basemaps Tab:

The Basemaps tab is populated with all .dgn and .dwg files found inside a basemaps folder. The file name is the relative path starting inside the projects PID folder. The File Desc is also listed. The table is editable, just double click on a cell to edit its value.

File Name	File Desc	
Design\Drainage\Basemaps\93263_BD001.dgn	v15.10.16 Dra	<input type="button" value="Clear Selection"/> Select the Basemaps that are to be placed/ replaced or appended in the project's index. <input checked="" type="radio"/> Place/Replace <input type="radio"/> Append <input type="button" value="Place Basemap Info"/>
Design\Drainage\Basemaps\93263_BD001.dwg		
Design\Drainage\Basemaps\93263_BD003.dgn	v15.01.16 Gra	
Design\Geopak\Basemaps\93263_BK001.dgn	v12.04.20 EX	
Design\Geopak\Basemaps\93263_BK001.dwg		
Design\Geopak\Basemaps\93263_BK001_Design-3D.dwg		
Design\Geopak\Basemaps\93263_BK002.dgn	v15.10.16 Pro	
Design\Geopak\Basemaps\93263_BK002.dwg		
Design\Geopak\Basemaps\93263_BK002_1.0Design.dwg		
Design\Geopak\Basemaps\93263_KL001.dgn	GEOPAK Pat	
Design\Geopak\Basemaps\93263_KL001.dwg		
Design\Geopak\Basemaps\93263_KC001.dgn	GEOPAK Cr	

Clear Selection Button

This button when selected will clear the selection of the Basemaps table.

Place/Replace Option

This option controls how the selected basemap data is placed. The actual placement of the selected data doesn't happen until the [Place Basemap Info Button](#) is selected. With this option selected when the [Place Basemap Info Button](#) is selected the application will clear out anything listed in the CADD Basemaps excel sheet before placing the selected data.

Append Option

This option controls how the selected basemap data is placed. The actual placement of the selected data doesn't happen until the [Place Basemap Info Button](#) is selected. With this option selected when the [Place Basemap Info Button](#) is selected the application will place all the selected rows in the basemaps table to the CADD Basemaps excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a file is already listed on the excel sheet it will not be placed again.

Place Basemap Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

Sheets Tab:

The Sheets tab is populated with all .dgn and .dwg files found inside a sheets folder. The file name is the relative path starting inside the projects PID folder. The Sheet Number, Sheet Name, and Sheet Desc are also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the Sheets table.

Place/Replace Option

This option controls how the selected Sheet data is placed. The actual placement of the selected data doesn't happen until the [Place Sheet Info Button](#) is selected. With this option selected when the



[Place Sheet Info Button](#) is selected the application will clear out anything listed in the CADD Sheets excel sheet before placing the selected data.

Append Option

This option controls how the selected sheet data is placed. The actual placement of the selected data doesn't happen until the [Place Sheet Info Button](#) is selected. With this option selected when the [Place Sheet Info Button](#) is selected the application will place all the selected rows in the Sheets table to the CADD Sheets excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.

Place Sheet Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

Alignments Tab:

The Alignments tab is populated with all alignment LandXML files found inside the Project's PID folder. The file name is the relative path starting inside the projects PID folder. The Align Name, Horizontal Alignment Type (dropdown options: Proposed, Existing), Horizontal Alignment Name, Existing Vertical Alignment Name (dropdown options are all Vertical alignments contained within LandXML), Proposed Vertical Alignment Name (dropdown options are all Vertical alignments contained within LandXML), Report Name, and Description are also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the Alignments table.

Place/Replace Option

This option controls how the selected Alignment data is placed. The actual placement of the selected data doesn't happen until the [Place Alignment Info Button](#) is selected. With this option selected when the [Place Alignment Info Button](#) is selected the application will clear out anything listed in the Alignments excel sheet before placing the selected data.

Append Option

This option controls how the selected Alignment data is placed. The actual placement of the selected data doesn't happen until the [Place Alignment Info Button](#) is selected. With this option selected when the [Place Alignment Info Button](#) is selected the application will place all the selected rows in the Alignments table to the Alignments excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.

Place Alignment Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

Surfaces Tab:

The Surfaces tab is populated with all surface LandXML files, .GEN files, and .tin files found inside the Project's PID folder. The file name is the relative path starting inside the projects PID folder. The



Surface Type (dropdown options: Existing, Proposed) and Description are also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the Surfaces table.

Place/Replace Option

This option controls how the selected Surface data is placed. The actual placement of the selected data doesn't happen until the [Place Surface Info Button](#) is selected. With this option selected when the [Place Surface Info Button](#) is selected the application will clear out anything listed in the Surfaces excel sheet before placing the selected data.

Append Option

This option controls how the selected Surface data is placed. The actual placement of the selected data doesn't happen until the [Place Surface Info Button](#) is selected. With this option selected when the [Place Surface Info Button](#) is selected the application will place all the selected rows in the Surfaces table to the Surfaces excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.

Place Surface Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

Info Files Tab:

The Info Files tab is populated with all files found inside an EngData folder inside the Project's PID folder. The file name is the relative path starting inside the projects PID folder. The Description is also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the Info Files table.

Place/Replace Option

This option controls how the selected Info Files data is placed. The actual placement of the selected data doesn't happen until the [Place Info Button](#) is selected. With this option selected when the [Place Info Button](#) is selected the application will clear out anything listed in the Info Files excel sheet before placing the selected data.

Append Option

This option controls how the selected Info Files data is placed. The actual placement of the selected data doesn't happen until the [Place Info Button](#) is selected. With this option selected when the [Place Info Button](#) is selected the application will place all the selected rows in the Info Files table to the Info Files excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.

Place Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.



Survey Tab:

The Survey tab is populated with all .dgn and .xls* files found inside the Survey folder and any .gpk file found inside the Project's PID folder. The file name is the relative path starting inside the projects PID folder. The file type (dropdown options: FieldBook, Surveyor Report) and Description is also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the Survey table.

Place/Replace Option

This option controls how the selected Survey data is placed. The actual placement of the selected data doesn't happen until the [Place Survey Info Button](#) is selected. With this option selected when the [Place Survey Info Button](#) is selected the application will clear out anything listed in the Survey Files excel sheet before placing the selected data.

Append Option

This option controls how the selected Survey data is placed. The actual placement of the selected data doesn't happen until the [Place Survey Info Button](#) is selected. With this option selected when the [Place Survey Info Button](#) is selected the application will place all the selected rows in the Survey table to the Survey Files excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.

Place Survey Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

3D Models Tab:

The 3D Models tab is populated with all .icm and .ifc files found inside the Project's PID folder. The file name is the relative path starting inside the projects PID folder. The Description is also listed. The table is editable, just double click on a cell to edit its value.

Clear Selection Button

This button when selected will clear the selection of the 3D Models table.

Place/Replace Option

This option controls how the selected 3D Models data is placed. The actual placement of the selected data doesn't happen until the [Place 3D Models Info Button](#) is selected. With this option selected when the [Place 3D Models Info Button](#) is selected the application will clear out anything listed in the 3D Models excel sheet before placing the selected data.

Append Option

This option controls how the selected 3D Models data is placed. The actual placement of the selected data doesn't happen until the [Place 3D Models Info Button](#) is selected. With this option selected when the [Place 3D Models Info Button](#) is selected the application will place all the selected rows in the 3D Models table to the 3D Models excel sheet under everything already listed in the excel sheet. This will not delete the data that was previously placed to the excel sheet. If a sheet is already listed on the excel sheet it will not be placed again.



Place 3D Models Info Button

When this button is selected the application will place the selected data from the application to the Project Index Excel file. See [Place/Replace Option](#) and [Append Option](#) for details on how the data will be placed.

Project Index Excel File

This excel file is created from scratch by the application when [Create New Project Index Option](#) is selected and the [Search Project Files Button](#) is selected. However a template excel file can be found at the following location within the ODOTcadd standards for manual entry.

`..\ODOTcadd\Standards\ODOT\ProjectTools\ProjectIndex.xlsx`

The Project index file has 7 excel sheets. The excel sheets are organized the same way the tabs are in the application.

Updates

Version 1.0.0.0: Initial build

Version 1.0.0.1: Added Integration with Projectwise.

Version 1.0.0.2:

- Changed PID folder to say Project Folder.

- Updated zip file name to be CTY-PID_CADD.zip.

- Added text boxes for county and PID to be used to create the zip file name

- Updated code to attempt to fill out PID and county text boxes when a project folder is selected.

Version 1.0.0.3:

- Fixed errors in code when creating a zip file into a projectwise location.

- Added link to youtube playlist.

Version 1.0.0.4: Updated code to account for legacy folder structure.

Version 1.0.0.5: Updated code for creating a zip file to include the gensum and projectindex files at the root level of the zip.

Version 1.0.0.6: Fixed bug in code that was causing it to end processing when a CDSS xml file was found with in the project folder.

Version 1.0.0.7:

- Pulled Projectwise API calls into separate dll.

- Project name is filled out with project name found in ELLIS if project folder begins with PID number

Version 1.0.0.8:

- Fixed crashing error is the last blank row was selecting (in any tab) and the place button was pressed.

- Updated code to fix problem when running in windows 7

Version 1.0.0.9:

- Updated code to get DWG drawing spaces using MicroStation if MicroStation is installed rather than using AutoCAD if AutoCAD is installed.

- Updated code to better handle AutoCADD COM object.

Version 1.0.0.10:

- Updated code to use relative path for Alignment Report files.

- Updated code to put the Alignment Report files in the zip file when the Create ZIP button is selected.

- Zip file now placed in 600-Contracts\04-Reference Files folder.



Version 1.0.1.1:

Fixed code that was omitting LandXML Alignment files if no profiles were found in the file
Fixed bug in code that removed the Proposed, Existing options in the dropdowns for Alignments > Hor Type and Surfaces > Surf Type.
Fixed bug in code that removed the FieldBook, Surveyor Report options in the dropdown for Survey > File Type.
Fixed crashing error that happened when creating zip file when GEOPAK is using a GPK file that is being added to the zip file.
Fixed crashing error that happened when updating existing ProjectIndex.

Version 1.0.1.2: 7/25/2018

Fixed crashing error if a folder name contained a period anywhere in the path to project folder.

Version 1.0.1.3: 7/26/2018

Fixed crashing error when creating a zip file that does not contain a .gpk file.

Version 1.0.1.4: 7/26/2018

Updated naming of zip file that gets created to match the naming convention in the Guidelines for Electronic Deliverables(from CTY-PID_CADD.zip to CTY-PID-CADDFiles.zip).

Version 1.0.1.5: 8/9/2018

Updated application to control error that causes program to crash if a file extension for dgn are invalid. (ie 12345_BE001.dgnold). Same error control added for .dwg, .xml, .gpk, .tin, .gen, .icm, and .ifc.

Version 1.0.1.6: 9/4/2018

Updated code that was causing the program to crash if projectwise explorer is not installed. (note that projectwise is not required to use this application).

Version 1.0.1.7: 9/18/2018

Updated application to not use case sensitive checks which was caused basemap and sheet files to not be found.

Version 1.0.1.8: 9/21/2018

Added checkbox to define if the Sheet name property from the sheet model properties should be used for the files description.

Added control to ensure that the project index excel file is Named correctly.

Version 1.0.1.9: 10/15/2018

Updated code that was causing the program to crash if a sid.xml file was found.

Version 1.0.1.10: 10/17/2018

Updated application so the place info button moved appropriately when the dialog is resized.

Version 1.0.1.11: 10/29/2018

Updated application to put any found pdf in the EngData tab, no matter what folder it is in.

Contacts

For any questions, suggestions, or problems with this document please contact the ODOT Office of CADD and Mapping Services by use of the following form on the ODOT website:

https://odot.formstack.com/forms/cadd_servicerequest
