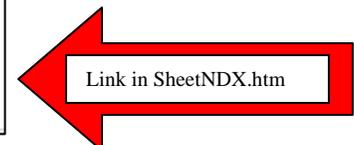


## How to Prepare Strung Projects for Electronic Delivery

Electronic Delivery of “strung projects” involves the act of combining two or more independent and secured project data sub-sets together. Stringing projects involves combining the data in a way that the end-user of the data (typically a contractor) can reasonably navigate “lead” and “goes-with” sub-project data comprising the strung project using a simple Internet Browser. The reader should already be familiar with the process of creating “Plans and Specs” data sub-sets from “Project” data sets that should be created prior to operations necessary for project stringing. The following steps will familiarize the user with the basic operations necessary, which should be applied when preparing a Plans & Specs delivery of a strung project.

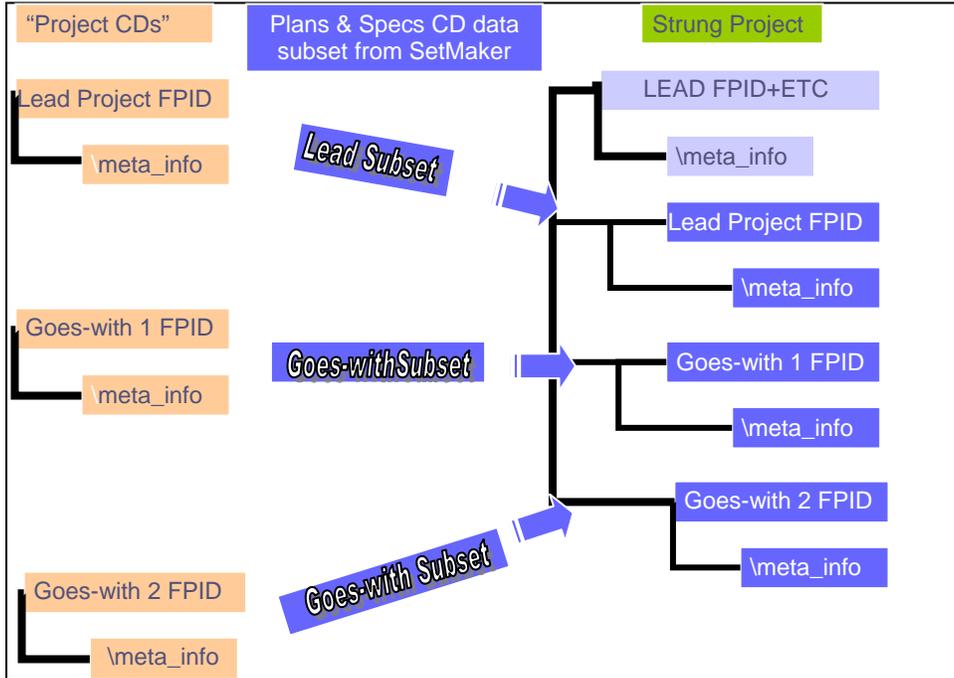
- 1) The first step - choose which two, or more projects will be strung together. Each project delivery contains an index (ProjectIndex.xml), and a modified version of the basic HTML Index report (SheetNDX.htm) that will contain a navigational hyperlink to the strung project parent folder. Navigation is permanent in each Lead and Goes-with *SheetNDX.htm* file as it is created by ProjectBrowser. The user is prompted at the time of creating the Sheet Index Report (*SheetNDX.HTM*) if this project is a component of a strung project or not?



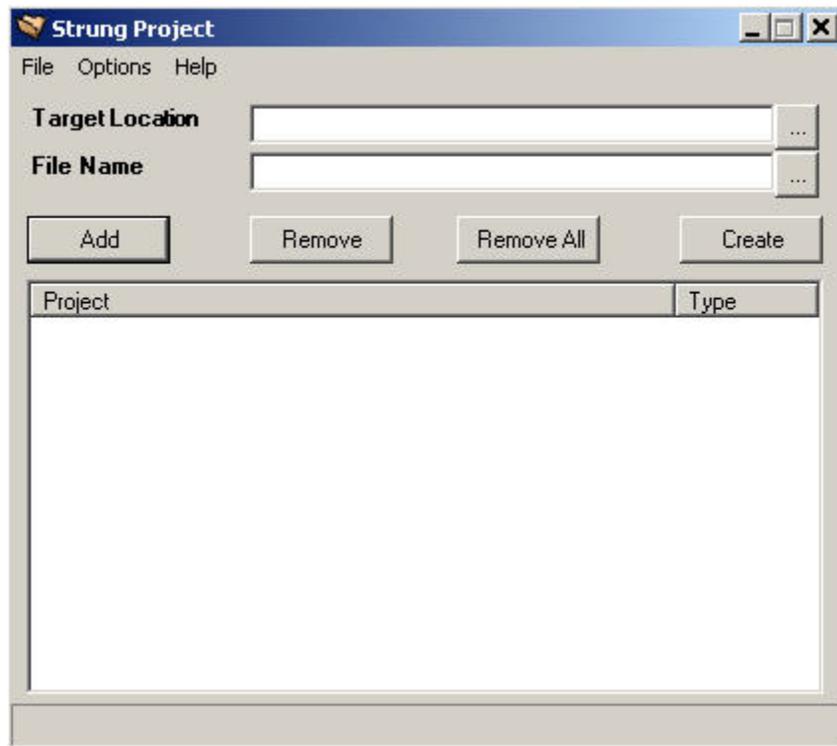
Note: When older projects that were secured prior to the availability of the FDOT2004 CADD Software release, and are to be part of the new strung structure, these projects will not have the static link in their SheetNDX.htm files as shown above. This is OK, because the end user of the resulting strung project can still use the Browser’s [BACK] button to navigate back to the parent page (the strung project’s SheetNDX.htm) that got them to a particular component project’s SheetNDX.htm. A mix of old and new component projects is possible, and in time, all strung projects will have the links as shown above.

- 2) Strung projects combine data from “Plans & Specs” sub-sets extracted from full project deliveries. SetMaker is the tool used to make the extraction of the Plans and Specs subset from each full Project delivery (not covered in this writing).
- 3) Always make a backup of the original data - In case of a user error, the software crashes, or whatever the mishap, the backup is a good starting point for recovery.

- 4) Decide which project is the “lead project”, and the remainder projects are “goes-with.” The following diagram below shows the “new” structure of the strung project, the source data coming from the “plans and specs” data subsets of each component project. The top level directory of the strung project is the Lead project’s 11-digit FPID number, with ETC appended (i.e. 12345678901ETC).



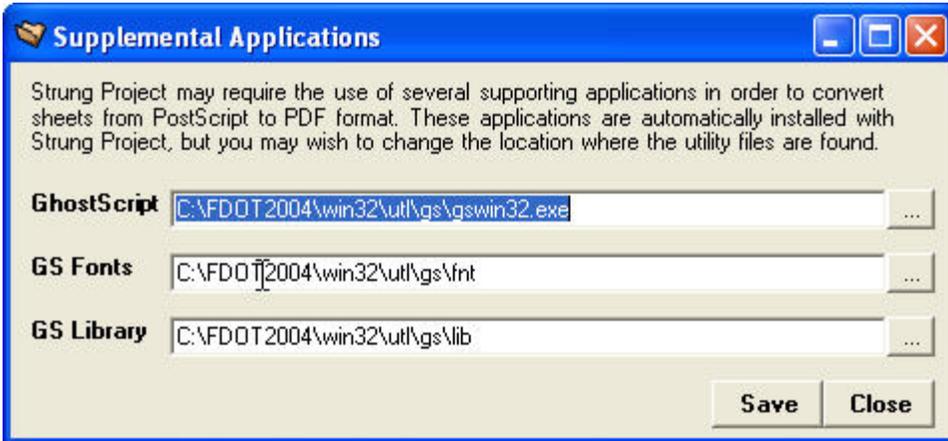
- 5) To create the strung project, run the StrungProject application from the Electronic Delivery interface.



6) In

order

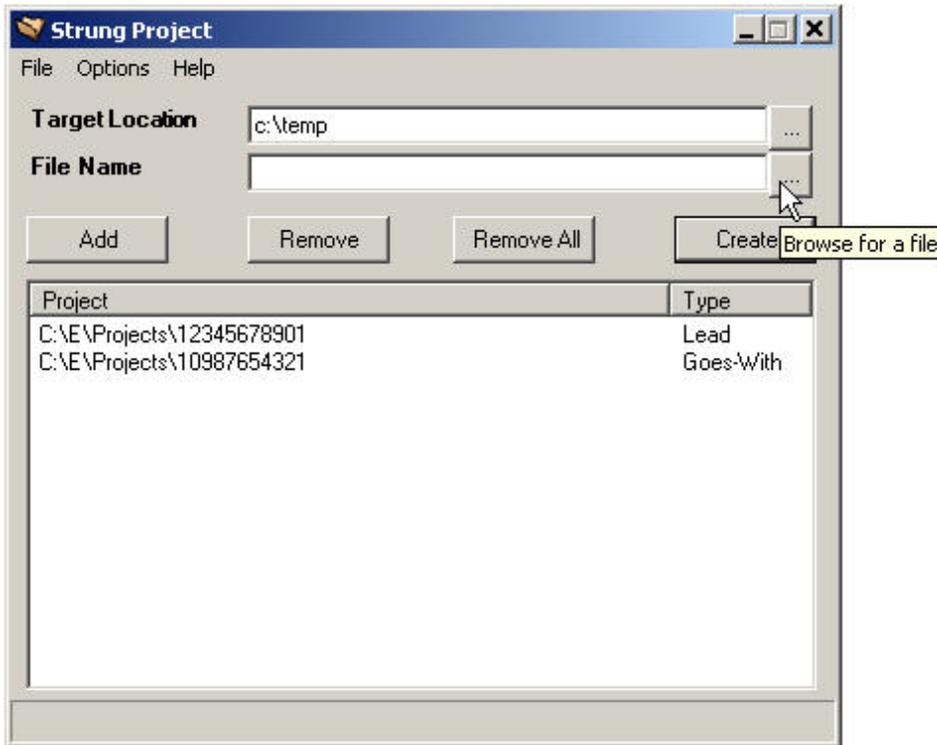
for StrungProject to create a composite 'Project.PDF' for all of the Lead and Goes-with projects (to be placed in the root directory of the strung project structure), the operation requires the paths to the GhostScript utility be set in the "Options" Menu pull down as shown below and saved:



- 7) From the "File Name" field shown in the StrungProject interface, navigate to the 'Lead Plans and Specs' data sub-set by pressing the ellipsis button [...] at the right of the 'File Name' field. Optionally, you can key-in the full path to the Lead, and press the [Add] button. The first 'Plans and Specs' data sub-set select will always be considered the 'Lead' by StrungProject.

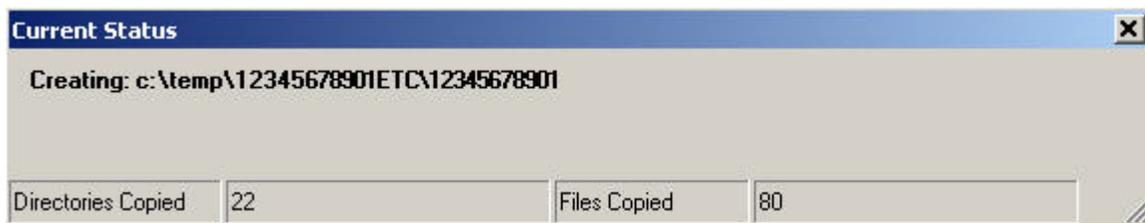
StrungProject will *validate* the Lead, and if no errors are, it will add the Lead to the composition window at the bottom of the dialog. If the Lead was selected by mistake, it can be removed from the composition window by highlighting the entry, then pressing the [Remove] button.

When you are satisfied the Lead project was selected properly, select a Goes-with project. Follow the same procedure as described above. As each Goes-with is selected, they too will be validated prior to populating the composition window. If needed, Goes-with projects can also be removed from the composition window by highlighting the entry and pressing the [Remove] button.



When you are satisfied that the Lead, and all Goes-with projects have been selected correctly, you should enter the path to the destination folder where the resulting strung project will be written. Here too, you can navigate to an existing directory, or key-in a new directory, etcetera. StrungProject will create the strung project folder structure, under the directory entered in the 'Target Location' field. The folder name of the strung project will be called \12345678901ETC in our example.

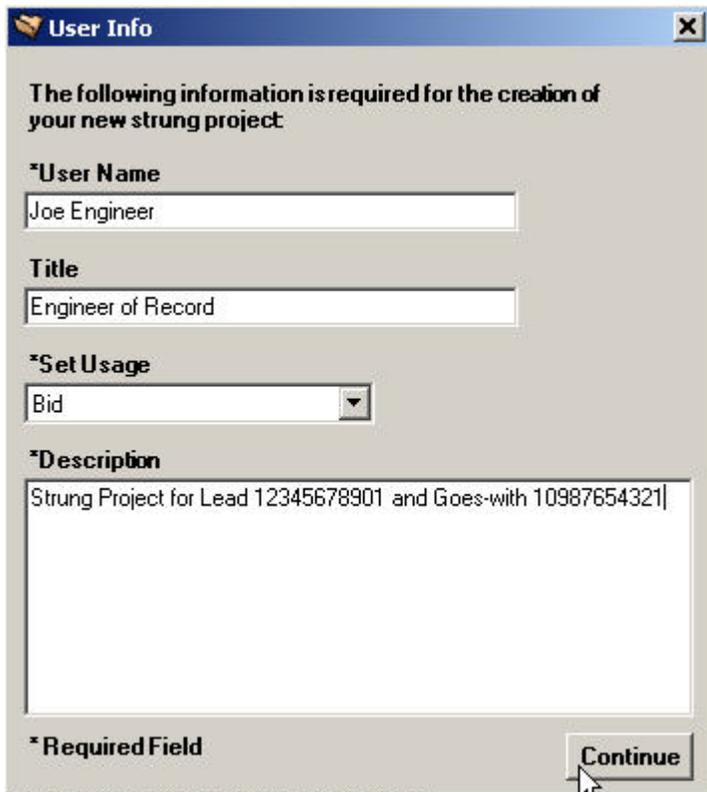
- 8) When you are ready to proceed, press the [Create] button. StrungProject will begin creating and completing the appropriate strung project directory structure, and then start copying each of the component 'Lead' and 'Goes-with' sub-projects into the strung project structure. As copying takes place, a status window is displayed showing progress statistics.



Once copying is complete, StrungProject will create a Project Identification file (ProjectID.xml) in the \\_meta\_info folder of the root strung project structure. This Project ID file is copied from the Lead project, and modified slightly by Strung Project so that

PEDDS will recognize the strung project as a unique project (a new PEDDS Project key is created). Likewise, a "seed" Manifest file (Manifest.xml) is also created in the \\_meta\_info folder; however it does not contain any file listing data (URLs or Hash codes).

**Note: The strung project directory structure is not secured by StrungProject – use PEDDS to do that...**



The screenshot shows a dialog box titled "User Info" with a close button (X) in the top right corner. The main text reads: "The following information is required for the creation of your new strung project:". Below this, there are four input fields, each with an asterisk indicating it is required:

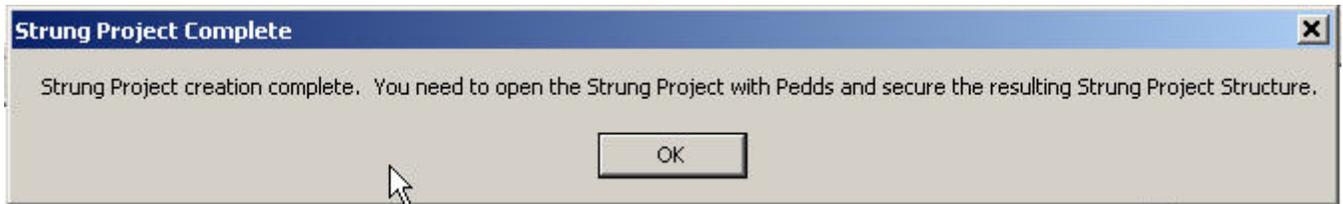
- \*User Name**: A text box containing "Joe Engineer".
- Title**: A text box containing "Engineer of Record".
- \*Set Usage**: A dropdown menu with "Bid" selected.
- \*Description**: A text area containing "Strung Project for Lead 12345678901 and Goes-with 10987654321".

At the bottom left, there is a legend: "\* Required Field". At the bottom right, there is a "Continue" button with a mouse cursor hovering over it.

Once the strung project's Manifest data is complete, StrungProject will append any "Project.PDF" files found in the Lead and Goes-with project(s) and place the appended composite (also called Project.PDF) in the root directory of the strung project.

Note that GhostScript runs with no user interface, and what appears to be a blank window will come up for each Project.PDF found in the component project(s), and once again to build the composite Project.PDF in the root directory of the strung project. Please be patient and allow this process to complete, as PDFs are being un-distilled to PostScript, concatenated, and re-distilled back to PDF, which is a very computer intensive operation.

When StrungProject has finished its work, it prompts the user with a message box to open the strung project directory structure with PEDDS.



PEDDS is used to modify the Project identification data (ProjectID.XML) for the strung project, as required, or Project Header data (stored in Manifest.XML). Once the user is ready to secure the strung project structure for delivery, he/she would do so by the ordinary procedure in PEDDS

- 9) Test all Sheet Index File Reports from an Internet Browser to make certain they are functional for navigation, and hyperlinks to plan sheets.
- 10) Prior to delivery, secure the entire strung project structure (from the top strung project directory) prior to delivery using PEDDS.