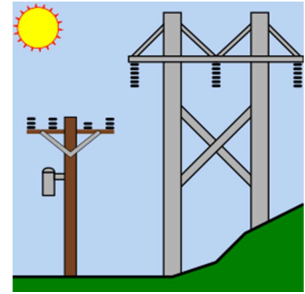# 2022 PLS-CADD Advanced Training and User Group Meeting
What's New in PLS-POLE™

Summary of changes since June 2019 User Group, covers versions 16.01-17.31. This includes the general releases v16.20, v16.51, v16.81, v17.22 and subsequent insider releases.

PLS-GRID

1) PLS-GRID Project Manager can now manage PLS-POLE projects.

   See "What's New in PLS-CADD", technical notes and videos for everything new on PLS-GRID.

Licensing

1) Added ability to "Unclaim" a license from the license dialog reached via the key button in Help/About.

   Licenses may only be "Unclaimed" from within the software if they had been claimed for at least 30 days.

   Please continue to contact technical support to unclaim licenses that are younger than 30 days.

New Commands

1) **General/Reference Manager** is a new command which keeps track of any non-project file you want to associate with a project. These files can be tagged with keywords, searched for, viewed and included in .bak files.

2) **Geometry/Miscellaneous/Wood Pole Defects...** can be input and has options for enclosed pocket, external decay, external pocket, thru hole and hollow heart defects. Defects will reduce the cross sectional area of the wood pole at the location of the defects.

3) **Model/Tubular Steel Davit Arm Optimizer** is a new command that is similar to the steel pole shaft optimizer.

4) "F3" hot key to reports for repeating the last Find. Use "Shift-F3" to repeat previous search but backwards and "Ctrl-F3" to use current selected text for the search, "Shift-Ctrl-F3" same as Ctrl-F3 but search backwards.

5) **Help/Register for Training** Classes command which enables you to see and sign up for classes (including our popular free Webinars) directly from within the software. Download of videos of previous Webinars from this command is available when running the current version of the software.

6) Steel single angle cross arms may now be input in **Components/Cross Arm and Geometry/Cross Arm**.

7) Added **File/Model Diff Since Last Save** command to allow a difference report of the model since the last time it was saved.

Engineering

1) Added ASCE 48-19 steel pole strength check option. Note this uses w/t limits based on unitless equations (Fy/E) instead of legacy w/t limits from ASCE 48-11. Examples we checked had a 0 - 0.5% difference in results vs. 48-11 and 48-05.

2) Added a Bottom Cut column to the FRP Components library that removes length from the bottom tube.

3) Read the new provenance string from LCA/LIC files that lists criteria file, RS or FE (and level), user, time, date, PLS-CADD version and structure location (long/lat) and print it in the Analysis Results report.

Standards and Codes

1) Initial implementation of EN50341-2-4:2016 (German NNA) requirements for wind and ice loading on poles provided for testing.

2) Added EN50341-2-2:2019 (Belgian NNA) wind/ice loading model that is similar to EN50341-1:2012.

3) Implemented ASCE 74-2020 (Face and Member) wind/ice loading methods in Loads/Vector Loads and Loads/Wire Loads.

4) Added AS/NZS 7000 terrain category selection: "1_2021" which includes the new Mz,cat values for TC1 in AS 1170.2-2021.

5) Added "IS802:2015 NFW" Structure Wind/Ice Loading Method (NFW = Narrow Front Wind) same as IS802:2015, but with Kz = 1 (note IS802 refers to Kz as GRF, but it is Kz). Use of this method forces saving in a new file version.

Performance

1) 32-bit version or Windows Vista is no long supported support.

2) During **File/Open** now read each DXF/SHP file on a separate processor core to speed up open.

Drafting and Graphics

1) Added **Drafting/Add Loading Tree Views** command that creates inset views for all load cases that show vector loads graphically. You enter the number of load cases per page.

2) Added option to Structure Inset Views to "Avoid text collisions".

3) **Drafting/Attachments (Raster and Vector)/Stretch" and "Drafting/Attachments (Raster and Vector)/Move** are now undoable and move now has a preview rectangle.

4) Structure Inset Views now allow the view angle to be different than the clip box angle so you can view a structure from a different angle than straight on. Use of this option will force saving in a new file format.

5) You may now apply bold, italic, and/or underline styles to text annotation. When used annotation will be saved in a new file format.

6) Text annotation now has an option to auto-size to fit in a box. When used annotation will be saved in a new

file format.

7) Annotation table edit now applies the same background color to all rows in multi-part entities (e.g. polygons).

Framing

1) Framing Edit now merges active steel shape library with Default for New Projects from Preferences since that is what will be used in framing edit session.

2) Framing that contains global joints (those entered in Geometry/Joints) will now result in an error since Framings may not contain global joints.

3) Saving the Framing Library now clears all .lca/.lic/.eia file references from framing models.

4) You can now attach cable elements to Framing joints the same way you can attach guy elements.

5) Now allow up to 12x more Frame Sets in the Framing library (12288 now available).

Interface

1) Now store undeformed geometry extents, scale and rotation in <project_name>.wnd whenever you save. On open the undeformed geometry will be returned to this state. Added "Window/Save Window State" so you can commit Window State without having to save the model.

2) Added "Append" command to table right click menu which will append text in the clipboard to all selected cells.

3) Restructured "3d Controls" dialog reached via "View/Display Options/Set Rotation, Color and Label Options" to make room for new options.
    a. "Along Member" now draws Member Labels along the axis of the member.
    b. "Custom" Member Labeling option that draws label based on settings in "General/Output Options". This label can include anything you like and recognizes the following .
    c. Added new Render Mode of "de-emphasize" that makes it much easier to see labels on top of a still rendered structure.keywords: %member_label, %length or %stock_no

4) 3D Controls dialog now has a "Guys only" option to limit labeling to guy elements. This feature was also added to Inset Views.

5) Automatic window resizing when you drag to the border of the application can now create half height windows if dragging to the bottom or top.

6) Added a scale indicator to the lower right of most graphics views. Control default visibility with new **File/Preferences** setting "Default show scale indicator" and explicitly turn it On/Off with **View/Pan, Zoom & Rotate/Show Scale Indicator**.

7) Added **Help/Download Examples...** command that enables access to the latest examples at any time (you can now restore examples inadvertently overwritten without a reinstall) as well as examples that are too large to ship with regular updates.

8) Reference Manager now includes the program name and version in the default informational string for newly

referenced files.

9) Otto-Pilot improvements: re-enabled access to Otto-Pilot, adjusted defaults so small projects fly by smoothly, now try to draw at a consistent rate irrespective of how much of the model is on the screen (will move smoothly for sparse scenes and take larger steps for more complex scenes).

10) **General/Output Options** "Print extended diagnostic output" now controls display of principal axes of inertia for steel angle cross arms.

11) Added **File/Batch Modify** option for "Pole Embedment Override".

12) Streamlined **Help/Download Upgrade** so it launches directly into the upgrade selection dialog. Options that only apply to legacy upgrade methods are no longer displayed.

Miscellaneous

1) Added "X Offset" and "Y Offset" fields to the **Geometry/Rake Pole...** dialog, which will update "Azimuth" and "Pole Rake" as the offsets are modified.

2) **File/Backup** now indicates that it includes files from the Reference Manager by default.

3) Added menu item **View/Dance Structure** so you can bind a hotkey to it (previously only available in right click menu).

4) Joints with **Geometry/Miscellaneous/Foundation Strength** capacities input are now drawn in dark green and those with a spring constant are drawn in reddish-orange when rendering the view.

5) Now print distance in the status bar when using **Drafting/Annotation (User Input)/Add/Dimension**.

6) The Texture column in **Components/Cross Arm** is now enabled independent of the selection in the Strength Check Type column.

7) Once again calculate and print F1 (fundamental frequency of the structure) for FRP poles when performing 222-G analysis. Previously skipped this because for FRP F1 = f(MOE) and MOE = f(temp) and didn't know temp. Now assume 0 deg C.

8) The Generate Graphs button in the Loading Method Parameters dialog now generates GRF and Wind Height Adjust graphs for non-solidity ratio based loading codes.

9) **File/Batch Save** now has a "%D" option for the pole length which will include decimal fractions

Reports

1) The "Base Plate Results by Bend Line" table now includes coordinates of all bolts effective on a line when **General/Output Option**s "Print Extended Diagnostic Output" is checked.

2) Now auto-detect PDF print driver built into Windows 10. You may manually choose a PDF print driver in the File/Preferences setting "Print driver used to create PDF files".

3) The new "Save As PDF" command now includes an option to save that PDF to Google Drive automatically.

4) Added right click menu command "Save As PDF to Reference Manager" for geometry views that saves the view to a PDF file which is added to the Reference Manager.

5) Added option to export tables to Google Sheets (both those in windows and those in reports): we preserve formatting, color coding, etc. during export.

6) Added ability to specify page size to use when saving reports to PDF to the Drafting/Page Size dialog. Otherwise this will default to sheet page dimensions.

7) Added experimental **File/Preferences** setting "Include XSD export along with XML export" that defaults to No. When set to Yes, the software will write the XSD file that corresponds to the XML exported.

8) Added **File/Preferences** setting "Program version to report during XML export" which defaults to blank. You may set this to whatever version you would like to have shown in the XML file header.

9) Changed Material Decompose Assemblies option available in **Model/Generate Input Echo Report** and **Drafting/Add Material List Report**, to include subassembly names in addition to component parts to be consistent with PLS-CADD.

10) Added Resultant Force to the "Foundation Design Forces For All Load Cases" output.

Web, Components, & Examples

1) New Videos
    a. Reference Manager see the video at https://youtu.be/K04mKvUcVzA
    b. PLS-GRID Project Manager - https://www.youtube.com/watch?v=UUZDwMKQi_s
    c. auto-detect PDF print driver built into Windows 10 - https://youtu.be/o5F_UzeFVrs
    d. export tables to Google Sheets - https://youtu.be/o5F_UzeFVrs

2) Technical Notes
    a. Modeling Double Cross Arms - https://www.powline.com/technotes/Double_Cross-Arm_Modeling.pdf
    b. PLS-POLE Workflow - https://www.powline.com/technotes/PLS-POLE_Workflow.pdf
    c. PLS-GRID Workflow - https://www.powline.com/technotes/PLS-GRID_Workflow.pdf

3) Component Libraries
    a. PUPI Fiberglass Brace Library - Updated August 2021
    b. PUPI Fiberglass Davit Arm Library - Updated May 2021
    c. Hughes Brothers Brace Library - Updated October 2019