

CSiBridge® 2015 (Version 17.1.0) Release Notes

© Copyright Computers and Structures, Inc., 2014

Notice Date: 2014-08-28

This file lists all changes made to CSiBridge since the previous version. **Most changes do not affect most users.** Incidents marked with an asterisk (*) in the first column of the tables below are more significant.

Changes from v17.0.0 (Released 2014-08-06)

Graphics

Enhancements Implemented

*	Incident	Description
*	69307	An enhancement was implemented, increasing the window refresh speed when using the Classical Plus (GDI+) graphics mode.

Analysis

Enhancements Implemented

*	Incident	Description
*	65841 66696	The speed of analysis has been increased by internal changes that have no effect upon results.

Miscellaneous

Enhancements Implemented

*	Incident	Description
	69212	The version number has been changed to v17.1.0 for a new minor release. CSiBridge v17 will be known as CSiBridge 2015.

Graphics
Incidents Resolved

*	Incident	Description
	61678	An incident was resolved where the graphical display of the model would sometimes appear to jump back to its original position when rotating or panning in GDI+ graphics mode. After this jump the view would display in the new position, so that the pan or rotate operation actually did perform correctly. Note that occasional jumps may still be seen on slower machines. This was a graphical issue only and no results were affected.
	67748	An incident was resolved in which an error was generated with certain specific models when graphically displaying distributed loads applied to curved frames. The curved-frame data was corrupted for the affected models, and this data will now be corrected when the model is opened. The graphical display will now be consistent with the corrected data.

Bridge Modeler
Incidents Resolved

*	Incident	Description
	68445	An incident was resolved for the Bridge Modeler where area objects generated for the slab adjacent to a double-bearing bent could have their local axes set to default orientation rather than aligned with the longitudinal and transverse axes of the bridge. When this occurred, stresses plotted on the model and reported in tables for the area objects would be consistent with the actual local axes as generated. Stresses shown in the bridge object display form and used for bridge design and rating are always calculated in the bridge coordinate system, and were not affected. This error had no effect on the overall behavior of the structure unless an orthotropic/anisotropic material was used, non-isotropic property modifiers were assigned, or area loads were assigned in local coordinates to the affected area objects, all of which are uncommon conditions for a bridge model. Bridge models should be updated in the new version to correct this error if it is deemed necessary. Alternatively, the local axes of the affected area objects can be corrected by direct assignment if needed.
	68647	An incident was resolved in the Bridge Modeler where updating the linked bridge model could take a very long time for curved composite bridges if the merge tolerance was set by the user to be very small. Now the time to calculate curved girder geometry will no longer be affected by the merge tolerance. Note that very small merge tolerances (much less than 1mm or 0.1 inch) are not recommended for bridge models in any case.
*	69648	An incident was resolved in the Bridge Modeler for curved bridges where the local coordinate system used for "after" section cuts could be in error by a small degree, affecting the resultant forces, moments and stresses reported at these locations and used for bridge superstructure design and rating. To further clarify this, section cuts are the locations along the length of the bridge object where element forces are summed across the whole bridge section, or across girders, beams, and slabs, to compute resultant forces and stresses. At each location, there is a "before" and "after" cut that are identical in location and orientation. The "before" cut sums the forces from all connecting elements that are down-station of the cut location, and the "after" cut sums the forces from the connecting elements on the up-station side. Both section cuts should use the same local coordinate system based on the longitudinal and transverse directions of the layout line at that location. Previously, the "after" section cut was incorrectly using the coordinate directions from the subsequent section cut location. As a result, a small jump could be seen in the values of force, moment, or stress between the "before" and "after" cut at the same location where otherwise no jump would be expected. The error was generally small, limited to approximately 1% of the larger of two coupled values (M3 and T, or V3 and P), because the subtended angle between section cuts is limited to one degree unless overridden by the user. Because the "before" value was correct, design at all locations except the start abutment would have used either the correct value or a more extreme value, and so would be conservative. This error only affected locations where the layout line was curved. It did not affect skew angles in any case.

Loading
Incidents Resolved

*	Incident	Description
*	68465	An incident was resolved where a bridge model could have been analyzed for the wrong lanes in a moving load case. The error could occur when multiple lanes were defined, one or more of the lanes did not fall over a bridge object, and one or more moving load cases were defined that did not specify that all lanes were to be loaded.

Analysis
Incidents Resolved

*	Incident	Description
	66589	An incident was resolved where, in certain rare cases for models containing cable objects, the analysis would complete but the model would remain unlocked and the results were not available. This only affected analyses run out-of-process on 64-bit machines. When results were available, they were not affected by this issue.
	69187	An incident was resolved where linear buckling load cases could use the wrong stiffness when the stiffness to be used had been saved from a previous run. For this error to have occurred, the buckling load case needed to use the stiffness from a nonlinear load case, the last linear load case in the previous run needed to use the stiffness from the same nonlinear load case, and the linear buckling load needed to be in a subsequent run so that it used the saved stiffness matrix and the .LOG file showed the message "Previous stiffness is still available at the end of case: xxxx", where xxxx is the nonlinear load case in question. In addition, the analysis needed to be run out of process, or if it was run in process, the second run needed to be after opening the model again. This error was not common. No other type of linear load case was affected.

Bridge Design
Incidents Resolved

*	Incident	Description
*	68508	An incident was resolved where the stresses calculated for nonprismatic steel bridge girders could be incorrect for bridge models where the slab is modeled as areas and the girders are modeled as mixed, i.e., with webs as area objects and flanges as frame objects. Stresses shown in the bridge object display form and used for bridge superstructure design and/or rating were being calculated from the section forces and moments using the section dimensions of the nonprismatic section at the start of the span rather than at the location where stresses were being reported. The effect could be conservative or unconservative depending on the difference in the section dimensions between the start of the span and the location in question. Design or rating values that used section forces or moments were not affected. Only those that used stresses were affected. Nonprismatic steel I- and U-girders were affected. Bridge girders modeled fully as areas or as frames were not affected. Prismatic sections were not affected. Analysis results plotted on the model were not affected. Design and rating requests for affected models should be re-verified with the new version.

Data Files
Incidents Resolved

*	Incident	Description
	69080	An incident was resolved where certain models would generate an error when running the analysis, and no results were available. This occurred because the Bridge Diaphragm material index had been corrupted as the material was allowed to be deleted. Now such models are detected and a material assigned to them when they are opened and the user is warned to check the material assignment. Additional checks are now performed for all frame and shell sections when a model is opened, and the user is warned if a material assignment needs review. Such cases are not common.

Installation and Licensing
Incidents Resolved

*	Incident	Description
	69122	An incident was resolved that addressed two issues with licensing: (1) The LEVEL.TXT and LMHOST.INI files used to control licensing were not being found in the installation folder unless the shortcut to start the application was modified to include the installation folder in the "Start in" field. The LEVEL.TXT and LMHOST.INI files worked properly when placed in the user settings folder. (2) Network licenses were not being released when the software was closed until after the built-in timeout period, which could be as long as 5 minutes.