

LUSAS 21.1 Error Fix and Modification Release Notes

This document lists modifications, other than the New Features in 21.1, that have been made since LUSAS 21.0-1c2 and is correct as of 12th July 2024.

Version 21.1-0c10 built 5th July 2024

LUSAS Modeller 21.1-0 (r48335)

Modeller was built with all revisions to r48333, LUSAS Tank r4973 and MBW r580, and is known as r48335

Errors fixed

The following critical, major, minor or speed issues are fixed:

Using the Order 'Feature/Loadcase' in Print Results Wizard shows message 'The results requested are not compatible with the set of objects chosen' when there is a rigid zone at the start of the beam but not when there is one at the end of the beam (33781)
In Configuration Utility > Add License from Server, there seems to be a character limit in the setup process (33717)
In a certain model, VLO envelope produced results >5% different from VLO loadcase, when using rationalised placement method (33685)
Problems assigning influence envelope attribute to certain lines in a model (33675)
Unable to assign DMI envelope attributes to joints (33661)
Coincident effects from VLO Run with grillage components are incorrectly reported as identical to primary component in VLO table results (33660)
Revit (*.elvb) files do not open in Modeller with a warning message "Microsoft VBScript compilation error: Expected end of statement at "values(0) = 0,3 at line 56" with comma decimal (33628)
Print Results Wizard greys out eigenvalues option when eigenvalues are only present in branches (33608)
No meshing errors/warnings appear in Modeller for poor quality quadrilateral elements with an internal 180 degree angle (33585)
Error 'Invalid Ko initialisation component of elasto-plastic interface material' triggered incorrectly (33584)
Modeller closes unexpectedly when using 'examine calculations' or 'total contributions' in Print Results Wizard when viewing multiple primary components and feature order in the same grid (33583)
Invalid activate and deactivate assignments in pre-v19.1 model file leads to 'file has an invalid format and cannot be read' error (33581)
Model correctly shows 'material is incompatible with joint elements' on first attempt to solve, but not second (33545)
Rail DMI solves for track 1 but not track 2 due to an error intersecting reference paths and a search area (33527)
Solution fails for Direct Method Influence (Rail) if the base analysis contains a nonlinear control with spurious error message 'Nonlinear control must be specified for the first loadcase of the analysis (RDNLCT PROCESSOR)' (33508)
Should not be able to obtain results from Print Results Wizard for combinations and envelopes that are invalid (e.g. one that contains a TLO envelope that in turn has no results) (33501)

Graph of nodal 'User Defined Results' shows incorrect values compared to graph of element results due to averaging error (33495)
Concrete stresses and creep losses (prestress tendon losses) are reported as zero when the analysis is solved by right-clicking and using 'Loadcases to Solve > Solve Now' (33453)
Moving the 'section property modifier' attribute from one analysis to another in the treeview deassigns but from the new assignment doesn't appear (33452)
Model closes unexpectedly sometime after assigning an inspection location to deactivated mesh (33446)
Selecting 'Detailed Calculations' for a Smart Combination in Steel Frame Design Results - EN 1993-1-1:2005+A1:2014 causes an 'unhandled exception' error and results are not shown (33436)
Unable to save model after making selected points mergeable without manual mesh reset ('The file could not be saved. An internal error occurred') (33430)
Rail DMI Analysis solves only a gravity loadcase due to an error in search area assembly on a particular model (33399)
Modeller closes unexpectedly when setting active a VLO envelope in a model where slices are used for traffic load optimisation with a fine Direct Method Influence grid (33397)
Continuous end condition for torsional warping beam does not lead to THW=0 (33318)
Cannot assign linear joint material with standard Civil and Structural licence (33296)
VLO facility: Load attributes are created with the same name, overwriting each other (33251)
Masonry Bridge Wizard 'example' button creates data error so that the bridge geometry cannot be created with spurious error 'Rigid haunching greater than (arch rise + crown thickness/2)' (33239)
SE contours for 'Stress - thick shell' incorrect by comparison to Stress (top, middle bottom) (33225)
A particular LUSAS model export to IFC and reimported is incomplete (33216)
Graph Wizard gives an 'invalid data' error when the active loadcase is of a different kind to the loadcases being graphed (33209)
Using grillage material attributes with thick cross-section beams can lead to incorrect results (33182)
Bridge loading (gravity) does not work correctly for soil with two phase elements (33170)
Modeller should ignore loadcases that are 'switched off' when working out which options to tabulate. e.g. option 428 for eigenvalue buckling (33160)
Use of p-y curves fails when spacing to first soil spring is greater than depth to bottom of reduced resistance zone (Xr - refer to API Recommended Practice 2A-WSD cl 6.8.2) (33155)
Print Results Wizard not showing beam/shell slice results for combination that includes a TLO Envelope and requires coincident effects (33129)
LUSAS Tank: Base insulation volume should be split at wall insulation when only 1 base layer exists (33123)
Moving load analysis is created without assigning compound loads when specified (33097)
Effective mass density output from ASPC with mixed material incorrect (33093)
LUSAS Tank: Export results to Excel with active local coordinates outputs incorrect distances and values (33087)
VLO EN1991-2 Sweden complimentary load lane 2 reduction factor is not applied (33054)
Values layer does not show Values of Slice Resultant Beams/Shells (33049)
Error when creating a copy of an Analysis in which a Nonlinear Cable Tuning Loadcase is considered (33016)
Unexpected support change when dynamic analysis with prescribed acceleration restarts (branches) from a static analysis (32997)

Computing tendon loading is unexpectedly time-consuming when applied to curved surfaces (32979)
Model with reset deformations applied to manually assigned interface will not solve (32973)
Disproportionately long time taken to delete a VLO Run with undo/redo switched (default) (32914)
Disproportionately long time taken to close down a model with Direct Method Influence Envelopes and TLO-generated loadcases (32913)
Error when using AASHTO LRFD 7th Ed code with Direct Method Influence Envelopes and VLO envelope (32876)
Slice Resultants Beam/shells does not work in eigenvalue analysis (32742)
Beam/shell slice resultant very inaccurate for a slice on a single element (32590)
Installation speed ups and size reductions (32486)
LUSAS Tank: Modeller closes unexpectedly when seismic loads are added to a 3D shell model (32440)
Graph wizard: options for 'All nodes in file' and 'Sum'/'Average' are not available (greyed out) unless one or more nodes were selected before launching the wizard (32168)
Creating a report which contains Design chapters fails with 'IDispatch error #14596' in a particular model (32161)
Improvement to speed of fleshing (31862)
Steel/composite deck design to EN1994 (PontiEC4) files cannot be read when Windows has been set to use comma as the decimal symbol (31761)
Steel/composite deck design to EN1994 (PontiEC4) shear checks - User should be able to choose the value for Eta because it is a Nationally Determined Parameter (31313)
Report writer omits chapters with selected (rather than active) loadcases included (31085)
Undo, redo and disaster recovery not working correctly for Design Combinations (30623)
Some joint materials switch u and v freedoms when cylindrical option is used, and some do not (30524)
Speed improvements for DMI analyses which include coincident effects (30018)
Direct Method Influence for shear in a line beam model is inaccurate (29954)
Influence assigned to inspection locations does not work (29941)
Cable forces table is empty when table is viewed via right click on cable tuning analysis (29161)
Modeller closes unexpectedly when DMI influence results are viewed after completion of VLO analysis in a specific model (28915)
Problem creating new cable-tuning analysis based on existing one - cable references disappear (28015)
Cable tuning wizard does not handle named lines (27898)
Tendon loads are placed slightly inboard of the end of the lines to which they are assigned (26485)
Section modifier affects deformations but does not affect stresses as expected (26297)
Rigidity Material input dialog - flexural matrix terms units incorrect dimensionality (21855)
Can't add fibre internal to a beam cross-section (21607)

A number of fixes for cosmetic issues, documentation issues, installation issues, and development requests are also provided. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

33769, 33768, 33764, 33761, 33748, 33732, 33708, 33701, 33680, 33674, 33629, 33625, 33609, 33567, 33565, 33564, 33559, 33558, 33541, 33540, 33530, 33525, 33514, 33485, 33481, 33478,

33464, 33456, 33420, 33416, 33373, 33368, 33344, 33326, 33304, 33295, 33275, 33260, 33257, 33249, 33235, 33224, 33223, 33218, 33215, 33212, 33210, 33202, 33194, 33189, 33183, 33181, 33178, 33177, 33150, 33144, 33143, 33119, 33117, 33114, 33103, 33073, 33071, 33050, 33046, 33036, 33035, 33032, 33030, 33026, 33018, 33011, 33010, 33004, 33001, 32988, 32974, 32971, 32967, 32964, 32963, 32961, 32954, 32948, 32935, 32928, 32926, 32922, 32921, 32919, 32911, 32899, 32890, 32886, 32875, 32867, 32833, 32821, 32786, 32750, 32728, 32724, 32723, 32713, 32710, 32702, 32673, 32654, 32642, 32638, 32610, 32605, 32603, 32602, 32580, 32579, 32543, 32517, 32515, 32476, 32475, 32468, 32453, 32438, 32370, 32367, 32173, 31679, 31612, 31569, 31338, 30683, 30673, 30559, 30558, 30554, 30500, 30189, 29973, 29968, 29688, 29598, 29549, 29139, 28906, 28673, 28447, 28345, 28292, 28219, 27876, 27728, 27620, 26926, 26778, 26722, 26604, 26598, 26508, 26128, 25979, 25858, 25598, 25359, 24625, 24189, 24167, 23859, 23300, 22499, 21573, 19062, 17847, 17508, 17273, 16422, 13989, 10986, 8909, 8351, 1921

LUSAS Solver 21.1-0 (r7975)

Solver was built with all revisions to r7967 (3rd July 2024) and is known as r7975

Errors fixed

The following critical, major or minor issues are fixed:

In a model with parasitic bar elements and concentrated loads, the analysis doesn't converge with Automatic controls (33726)
'Fatal database error detected in routine setldc' occurs when solving some models with lift-off supports (33633)
Deformation reset results in upward deflections in models with spring supports (33139)
Sum mass participation factor may be higher than 1 in models with constraint equations (32100)
Models with many constraint equations that have linear dependency (including some Rail Track Analysis models) fail to solve (31070)
Modal mass of some modes is larger than the total mass of the structure (30986)
System error (CSPROP processor) caused when using concrete cracking and crushing material (model 109) with FIB Model Code 2010 and 'Permanent loads dominate" switched off (30335)
Convergence difficulties using nonlinear concrete model 109 with EN1992 creep and shrinkage (29725)
Mismatch in displacements between connected beam and shell elements due to internal point computation (29413)
Determine Rayleigh damping coefficient from initial stiffness, rather than tangent, stiffness (28338)
Inconsistent results (small differences between identical analysis runs) can sometimes be obtained for ill-conditioned problems with a large number of constraint equations when using the Fast Parallel Direct solver with multi-threading (26257)
Tied mesh specified constraint fails to solve where a local coordinate is also assigned to features (21047)
Eigenvalue extraction for a model with constraints fails with error CODE -737 in ROUTINE XDSEEX (20092)
Thermal surface with constraint equations fails to solve with system error in APPCDE processor when using frontal solver (14185)
Constant displacement constraint equation assigned to multiple lines fails when using frontal solver (7902)

A number of fixes for cosmetic or speed issues and development requests are also provided. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

33727, 33515, 33156, 27954