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 05th December 2024.

Version 21.1-2c1 built 17th Nov 2024

LUSAS Modeller 21.1-2c1 (r49944)

Modeller was built with all revisions to r49944, LUSAS Tank r5399 and MBW r599, and is known as r49944

LUSAS Solver 21.1-1c3 (r8045)

Errors fixed in all products

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

34351	Maximum value from TLO Envelope not reported in PRW
34379	Centrifugal in VLO allows upwards forces
33883	Crash on save (possibly disk full)
34285	Response spectrum error - Response spectrum 2 does not exist
34309	Error message when attempting to run a VLO Envelope Run: COM object that has been separated from its underlying RCW cannot be used
34358	Modeler crashes under specific moving operation
34360	Conversion to v21.1-1 corrupts particular file
34362	Reference path not exporting in lvb
33369	Cable tuning forces in a nonlinear cable tuning analysis are not available by right clicking > calculated forces in Modeller
33984	Lift-off supports in version 21.1-0 function differently compared to older versions

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:

25885,33911,34257,34273,34274,34282,34290,34372,34407,31549,31582,32461,34416, 27738

Version 21.1-1c3 built 16th Oct 2024

LUSAS Modeller 21.1-1c3 (r49539)

Modeller was built with all revisions to r49539, LUSAS Tank r5399 and MBW r599, and is known as r49539

LUSAS Solver 21.1-1c3 (r8045)

LUSAS Tank Update

Enhancements to stage construction and the capability to model wall openings within 3D Shell models have been added to the LUSAS Tank.

Errors fixed in all products

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

13945	The 32-bit Solver fails when allocating a large amount of memory with the Frontal solver.
15633	"forrtl: severe (157): Program Exception - access violation" error during an eigenvalue buckling analysis
16754	Rigid Link Constraints assigned to surfaces that have underlying nodes shared with beam elements returns errors - Constraints could not be assembled into the front
16821	On some machines concrete model 102 converges differently
16906	Solver aborts with "internal file name specified too long" error in a transient dynamic analysis
19867	Transient dynamic analysis with over 10,000 time steps fails with a database error - Internal File name specified too long
21194	DMI Influence attribute with underscore character gives error: ***FATAL DATABASE ERROR*** Detected in routine LDTTLX
21765	Solver fails on a medium size model with contact and quadratic elements
22515	Scratch Files (PARSLV Processor) error when using Fast Parallel Direct Solver
23627	Fatal database error regarding PTEMP in RDLDSI
26045	Fast parallel direct solver fails to solve with constraint equations
29296	Cannot access Bridge deck (Grillage) material attribute using LUSAS Bridge LT
31275	PontiEC4 assumes Primary Thermal effect > Secondary Thermal effect when creating design combinations, but this is not always true and therefore can lead to less onerous combinations
31348	When a nonlinear loadcase is followed by an eigenvalue loadcase, the latter fails
31757	Branch analysis with mixed nonlinear and eigenvalue loadcases has misaligned names in treeview
32762	Tank - Pedestal mass is incorrectly computed when the base slab has variable thickness

32763	Tank - 3D shell model created from LNGwizard, fails to create piles at the ring
32892	Export to Composite Deck Designer (PontiEC4) slow when other slice utilities are present in the model
32939	Branched analysis returns database error "Internal file name specified too long"
33092	Steel Composite Bridge Wizard runs out of memory when the projection of a given intermediate bracing run extends beyond the skewed support lines
33262	Setting "Visible All" after plotting contours became slower in V21.1
33720	Crash after deleting 3D slice, after "graph through 2D" has been used
33730	System error when using Newton-Cotes integration
33758	The Direct Influence Analysis allows a loading grid to be used with the design code "CS 454 rev0 ALL Model 2" which could potentially not load supported nodes and give incorrect results
33783	Tank - steel roof only model for full (360 deg) tank takes too long
33787	Eigenvalue branch analysis does not solve when the "Convert assigned loading to mass" option is ticked
33788	Tank - Export Design Results 3D error - variable t requires scope to avoid ambiguity
33801	Incorrect supports in an analysis that starts with a restart from a loadcase
33826	Table 13 from BS5400-2:1978 is not considered when running VLO. The load magnitude can be considerably higher when considering smaller loaded length.
33842	Tendon loss calcs take longer in v21.1 than in v21.0
33873	Reaction stress values are not shown in PRW output where there is an averaging discontinuity
33906	Beam/shell slice results for TLO envelopes ignored in combinations, thus giving a wrong result
33915	Arbitrary section property calculator fails for a particular surface with a complex boundary
33955	Error message when attempting to add a valid custom vehicle for the UK code CS 458 - "Failed creating input files for data objects - cannot obtain the referred variable for a non-variable field!"
33965	Creep material fib Model Code 2010 aggregate droplist only has one option
34015	Arc/Circle Tangent to lines option is giving an error "Object doesn't support this property or method: selection.arcsTangentToLines_S"
34021	When joints are used with RC Slab / Wall Designer, results are not obtained for the surface elements assigned with joint mesh and material.
34045	The calculation of Primary Effects considers the tendon load assignment and not the actual position / length of the tendon
34046	Exporting arbitrary section causes crash
34070	DMI attributes assigned to beam shell slices appear in the DMI analysis list as loadcases in v21.0 but not in v21.1
34129	Combinations are not updated when moving / reordering loadcases by drag and drop to the very last position
34132	Primary and secondary prestress moment Mz is incorrect in 2d models
34136	Alternative loading patterns not considered for influence assignments even though they were requested in a VLO Run
34139	Automatic setting for Non-reflecting boundary condition leads to errors.

34152	Prestress primary and secondary effects are wrong for non-symmetric tendons / structures
34197	The effect of prestress loading can be seen in an analysis after all prestress has been deassigned
34258	In some models, primary shear effects come with the opposite sign. Calculation of secondary effects is affected.

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:

16261,26106,26758,27053,27738,27932,29207,29294,29308,29403,29445,29514,29814,30337,30435,30560,31019,31032,31038,31068,31539,31541,31549,31552,31570,31573,31575,31582,31633,31642,31651,32461,32465,32520,32852,32864,33025,33067,33085,33094,33258,33297,33381,33383,33389,33418,33575,33578,33603,33678,33704,33727,33738,33784,33813,33814,33866,33936,34041,34082,34112,34113,34188,34206,34255

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