



Akselos

Known Issues and Limitations

Release 2024.10

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Classification: Public

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Akselos Modeler and Akselos Portal

No	Description	Register Date	Status	Mitigation	Fixed Version	Measurement Notes
1	Hydrodynamic parameters used for wave load cases are constant on one beam element. This may lead to mismatched results compared to other software. This especially happens for beam elements near sea water level. Measurement is under the process.	Oct 5, 2022	Resolved	Split beams at sea water level, table's elevations	Version 2023.04	The software can detect changes of marine growth distribution within one beam element now. This affects all wave-related loads (dead load, buoyancy, etc.)
2	Users cannot define fatigue parameters for hotspot locations on solid components	Oct 5, 2022	Resolved	None	Version 2023.04	Design fatigue factor (DFF), SN curve can be defined for each hotspots of fatigue components
3	Fatigue result visualization for solid components are not yet supported	Oct 5, 2022	Resolved	None	Version 2023.04	Fatigue damage result on solid elements can be displayed as similar as hotspots on shell elements
4	UI features to build beam systems (jackets) from scratch are limited. There should be features to import beam systems from other formats, basic UI to create/modify and delete beam elements.	Jun 3, 2022	Acknowledged	None		
5	UI features to modify beam system are limited. The following features should be improved: - Assigning/modifying beam cross-section to beam elements - Splitting/merging beam elements - Creating/assigning/modifying hydrodynamic table to beam elements - Beam/node selection	Jun 3, 2022	Acknowledged	None		

6	Selecting property on the left panel should highlight related beam elements on the graphic window	Jun 3, 2022	Acknowledged	None		
7	Font size is small Widget size are not dynamically scaled	Jun 3, 2022	Acknowledged	None		
8	Creating offset at 1D beam joint features A UI to create offsets for braces at joints. Users can modify gaps between braces.	Jun 3, 2022	Acknowledged	None	Version 2023.04	Users are able to create rigid connectors which have the same axis with parent beam elements now. The rigid length is computed automatically based on cross-section of chord/leg (using outer diameter). More configuration options are under progress
9	Load case creation workflow is complicated There are several steps to create a simple load case via UI. This could be troublesome.	Jun 3, 2022	Resolved	None	Version 2024.01	
10	Configuration for pushover analysis is complicated	Jun 3, 2022	Resolved	None	Version 2023.05	Implemented many UI to configure Pushover analysis, including a wizard to set up analysis models for Risk-based Inspection.
11	Define load combination in load combination	Jun 3, 2022	Acknowledged	None		
12	Visualization of node/boundary ports/constraints in a more convenient way. I.e. different symbols for fully fixed, partial fixed, pin boundary conditions.	Jun 3, 2022	Resolved	None	Version 2023.11	-
13	Mapping function is not fully supported in terms on UI and solver functionalities	Mar 13, 2023	Resolved	None	Version 2023.08	-
14	Moving and rotating 2 components in sequence but the effect is applied for both components	Mar 20, 2023	Resolved	Save the model and restart Akselos Modeler	Version 2023.05	-
15	"Load More" feature takes much time on some	Apr 24, 2023	Resolved	None		

	particular models (e.g. Coker)					
16	Token Framework Rev2 which can be applied to some customers since September 2023 has the following limitation: + Users cannot check remaining tokens of the organization + Users can only see token usage due to solving jobs	Sep 26, 2023	Resolved	Akselos Support can help providing the remaining tokens	Version 2024.01	-
17	Some parameters of Drag load cases (Morison loads) such as current_depth, current_velocity, etc. cannot be edited using UI	Sep 26, 2023	Resolved	Modify the information with AKS JSON format manually	Version 2023.11	-
18	Created beam components are stored in AKS folders by default. Model training is not yet supported for AKS folders.	Jan 15, 2024	Resolved	Move beam components from AKS folders to "components" folder of collections. There is an UI supporting this operation.	Version 2023.04	-
19	Akselos Modeler does not allow enter some expressions (red box border) even if the expression is correct in syntax	Jan 15, 2024	Resolved	Enter the expression manually via JSON Editor	Version 2024.04	-
20	The left panel does not change from "Model tree" to "Collection tree" automatically with "Open in Editor view" tool	Jan 15, 2024	Resolved	None	Version 2024.04	-
21	There is no warning / error when deleting Material ID / Cross-section ID that is being used in the model. A warning / error message is only introduced when the model is solved.	Apr 22, 2024	Acknowledged	None	Version 2024.10	There is an indication that the material ID is being used in the current model.
22	Cloning beam load cases with selected beam elements may create an unexpected relationship between 2 load cases: modify beam elements of one load case affect the other one.	Jul 15, 2024	Resolved	Do not clone those load cases, or do not modify applied beam elements after cloning.	Version 2024.10	-

Akselos Solver

No	Description	Register Date	Status	Mitigation	Fixed Version	Measurement Notes
1	Pushover solver and Boat impact are not yet supported for shell elements	Nov 2, 2022	Resolved	None	Version 2023.04	Pushover and boat impact including geometry nonlinearity and plasticity are not supported for shell elements with small strain behavior.
2	<p>Consider to use B-Bar for thermal expansion training</p> <p>We want to use B-bar for thermal expansion training by default because we are using B-Bar for FEA by default. At the moment, inconsistent integration types between FEA and training leads to large error indicators for some models.</p>	Aug 19, 2022	Resolved	None	Version 2023.11	-
3	<p>Normal load defined by elem_xyz no longer worked</p> <p>Error message returned when using elem_xyz for normal load: ---- A parameter was not assigned a value. (('o-normal_load_surface_200',) ('elem_xyz',)) ----</p>	Oct 4, 2022	Resolved	None	Version 2023.11	-
4	<p>Enable Heat and Elasticity solves</p> <p>Users need to have 2 separated collections for 2 different physics: heat and elasticity</p>	Sep 30, 2022	Resolved	None	Version 2024.07	Support for FEA and RB-FEA analysis

5	<p>Maximum envelope solution for time-history simulation</p> <p>This feature is not yet implemented for time-history solutions. It includes:</p> <ul style="list-style-type: none"> - Maximum envelope Von Mises stresses to check with Allowable Stresses - Minimum envelope in-plane (panel) stresses to be used for shell buckling check 	Sep 9, 2022	Resolved	None	Version 2023.08	<p>Envelope solution for Von Mises stress is ready</p> <p>Envelope solution of minimum stress components in shell element's local coordinate system is available</p> <p>Strength check using envelope solution is not yet supported.</p>
6	Temperature dependent shells is not yet supported	Nov 4, 2021	Resolved	None	Version 2024.04	-
7	<p>Nonlinear shells (NLGEOM and/or plasticity) implementation is not finished yet. They are not fully validated.</p>	Nov 4, 2022	Resolved	None	Version 2023.04	<p>Pushover and boat impact including geometry nonlinearity and plasticity are not supported for shell elements with small strain behavior.</p>
8	<p>Inertia Relief implementation is not finished yet. It is still being improved and validated in the RB-FEA and Hybrid cases.</p>	Nov 4, 2022	Resolved	None	Version 2023.11	-
9	<p>"Occlusions" in cavity radiation is not supported</p> <p>Currently our ViewFactor matrix calculation ignores the fact that some elements may not be able to "see" other elements due to occlusions in the geometry of the cavity.</p>	Jun 18, 2021	Resolved	None	Version 2024.07	-
10	Optimizations to reduce solve time and memory usage for large jacket models are ongoing	Oct 5, 2022	Resolved	None	Version 2023.08	Processing time and memory required for jacket simulations are reduced.

11	<p>Using Single Response can push performance of multiple-time-step solve. However, there are some limitation: It only works for static elasticity projects (for Floating Wind, Fixed Offshore Jacket assets)</p> <p>The solving time is not displayed on the right panel of Akselos Modeler when it finishes</p>	Apr 24, 2023	Resolved	Turn this option off	Version 2023.08	-
12	<p>The RB-FEA Solver for Thermal Physics may experience limitations when working with temperature profiles that exhibit significant variations.</p>	Jun 1, 2023	Resolved	<p>When dealing with large temperature profiles, we strongly recommend exercising caution while using RB-FEA. It is therefore advisable to carefully assess and validate the results obtained from the software in such cases. In certain situations, the development of a Machine Learning (ML) model can be developed to anticipate stress levels under such circumstances. When used the detailed information regarding the ML specifications, testing methodology, and verification process will be provided to clients.</p>	Version 2024.10	Using POD+GPR applet to perform simulations
13	<p>FEA Modal structural analysis cannot generate more than 3000 mode shapes</p>	Dec 1, 2023	Acknowledged	Users are able to generate higher mode shapes by entering the		

				target frequency. Please contact Akselos Support for more information.		
14	Simulation result for unsymmetric cross-section for 1D beam element may be not correct	Jan 15, 2024	Resolved	None	Version 2024.04	-
15	RB-FEA Modal analysis introduces the following error message when solving a model with mapping functions --- array_idx < A_theta_array[i].size() Invalid index: 1, A_theta_array[i].size(): 1 Sending error: 10100 The job failed due to an unspecified error. Invalid index: 1, A_theta_array[i].size(): 1 ---	Jan 15, 2024	Resolved	None	Version 2024.10	-
16	Some models with face port - node port connections can have the following error during training: --- map_find() error: key not found in file fe_systems/rb_fe/elasticity_condensing.C on line 617 Sending error: 10100 The job failed due to an unspecified error. map_find() error: key not found in file fe_systems/rb_fe/elasticity_condensing.C on line 617 ---	Jan 15, 2024	Resolved	None	Version 2024.04	-
17	Using both surface contact and geometric nonlinearity is not yet supported	Jan 15, 2024	Acknowledged	None		
18	Using both gasket element and geometric nonlinearity is not yet supported	Apr 22, 2024	Resolved	None	Version 2024.10	-
19	Using both gasket element and pre-tension is not yet supported	Apr 22, 2024	Resolved	None	Version 2024.04	-
20	“Beam release” does not have effect when geometric nonlinearity is enabled	Oct 1, 2024	Acknowledged	None		

Tools and Wizards

No	Description	Register Date	Status	Mitigation	Fixed Version	Measurement Notes
1	<p>SACS Importer does not have an option to add a pile-structure interaction (PSI) system directly</p> <p>SACS Importer only reads SACS input files now. There is no option to consider PSI files during conversion. However, this can be done via the PSI plugin.</p>	Jun 3, 2022	Acknowledged	Convert SACS model first, then create pile-soil system		
2	<p>Pile-structure interaction (PSI) support SAND and CLAY soil type only</p> <p>PSI plugin only supports "SAND" and "CLAY" soil type from SACS input file. Other soil types are not yet supported.</p>	Oct 5, 2022	Acknowledged	None		
3	<p>Performance of PSI tool is slow for some certain cases</p> <p>Generating non-linear pile-soil systems takes longer than it needs, especially when the refined length is small (less than 0.5 m).</p>	Oct 5, 2022	Resolved	Do not use refined length segment less than 0.5 m	Version 2023.04	Performance is improved: The non-linear pile-soil system can be generated much faster.
4	<p>3D shell joint creation plugin only works with Coreform Cubit 2020</p> <p>It generates 3D shell joints from 1D beam joints by calling Coreform Cubit in the background. There were changes from Coreform Cubit 2021 that broke this tool. Only Coreform Cubit 2020 is working with this tool now.</p>	Nov 1, 2022	Acknowledged	Use Coreform Cubit 2020		
5	<p>Soil linearization tool is not fully validated</p> <p>For jacket structure, this tool generates linear stiffness matrices (6x6 matrix) at pile heads to replace the non-linear pile system for modal and spectral fatigue</p>	Jun 1, 2023	Resolved	None	Version 2023.08	The pilehead displacement between non-linear case and linear case matches well.

	analyses. It ensures the behavior (displacements at pile heads) are similar between the non-linear model and the linear model. This is not fully validated yet.					
6	<p>Enhancement to Soil linearization</p> <p>The current soil linearization approach has some limitations when dealing with high wave heights. A new algorithm is being developed to remove those limitations.</p>	Oct 1, 2024	Acknowledged	Using the current approach of soil linearization, double check the structural response before and after performing soil linearization.		

Assessments and Procedures

No	Description	Register Date	Status	Mitigation	Fixed Version	Measurement Notes
1	Beam Codecheck supports one standard for one analysis There is a demand on using a group of standards for beam codecheck, for example, API for tubular beams + AISC for non-tubular beams.	Jun 3, 2022	Acknowledged	None		
2	Beam Codecheck returns UF=0 for invalid members There should be no value (None/null) for those members	Jun 3, 2022	Acknowledged	None		
3	Beam Codecheck runs analysis for the jacket and pile separately They should run together as once and displays a whole visualization on graphic window	Jun 3, 2022	Resolved	None	Version 2023.04	Codecheck now can run both jacket model and pile at once
4	Jacket Spectral Fatigue: Stress concentration factor (SCF) computed for 1D beam joints using geometry only. SCF with the effect of loading is not yet supported.	Jun 3, 2022	Acknowledged	None		
5	Jacket Spectral Fatigue: only supports S-N curve with 2 slopes for now.	Jun 3, 2022	Resolved	None	Version 2023.04	Users now can specify both 1 slope or 2 slope SN curve from the user interface. They are able to define custom SN curves for each collection.
6	Jacket Spectral Fatigue with time-domain stress RAOs has slow performance as the jobs are not distributed well on computing nodes.	Jun 1, 2023	Resolved	None	Version 2024.01	-

7	Jacket Spectral Fatigue with time-domain stress RAOs only supports linear systems, and for beam elements.	Jun 1, 2023	Acknowledged	None		
8	Shell Strength Check implementation for DNV-RP-C201 and DNV-RP-C202 has the following limitations: + Lateral loaded pressure on panels are not yet taken into account + Stress components are averaged along panel edges + Stress of 1D stiffeners is not yet taken into account + 3D shell stiffeners are not yet supported	Sep 26, 2023	Resolved	None	Version 2024.10	-
9	Wind Load on Floating Wind Tower (generated from OrcaFlex data) hasn't considered tower fluctuation moment during simulation	Dec 1, 2023	Acknowledged	None		
10	Current Load on Floating Wind using OCIMF (generated from OrcaFlex data) hasn't been supported yet	Dec 1, 2023	Acknowledged	None		
11	Second order wave load on Floating Wind (generated from OrcaFlex data) hasn't been supported yet	Dec 1, 2023	Acknowledged	None		
12	Stress concentration factor (SCF) calculation returns only one set of values for 1 of 2 ends of the beam if it is connected directly to 2 different joints.	Jan 31, 2024	Acknowledged	Split that beam elements into 2 segments		
13	Deterministic fatigue analysis does not support beam components storing in AKS folders	Apr 22, 2024	Acknowledged	Move beam components from AKS folders to the "components" folder of collections. There is an UI supporting this operation.		