SAP2000® Version 17.1.1
Release Notes

Notice Date: 2014-10-01

This file lists all changes made to SAP2000 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 v17.1.0 (Released 2014-09-02)

Application Programming Interface
Enhancements Implemented

*	Incident	Description
	69003	An enhancement has been implemented for the Application Programming Interface (API) to allow retrieval of load combination results with correspondence. For this to work it is first necessary to call SapModel.Results.Setup.SetOptionMultiValuedCombo(3) to activate this option.
	70180 70241	The Application Programming Interface (API) has been updated to provide support for 64-bit standalone API clients. This was previously available in v16. API developers should refer to the updated API documentation for details on changes that are required to use a 64-bit standalone API client with SAP2000 v17.
	70276	An enhancement has been implemented to allow API clients to attach to instances of SAP2000 that were started manually.

Miscellaneous
Enhancements Implemented

*	Incident	Description
	70080	The version number has been changed to v17.1.1 for a new minor release.

User Interface
Incidents Resolved

*	Incident	Description
	69409 70874	An incident was resolved for the Shell Section Layer Definition form in which some of the buttons could become hidden on certain machines.
	69846	An incident was resolved in which the program would sometimes terminate during or just after using the File > Print Graphics command. This was a user interface issue only and did not affect results.
	70089	An incident was resolved in which the program would terminate if the keyboard arrow keys were used after starting the program, but before opening or starting a model.
	70318	An incident was resolved where the software would terminate when trying to modify an auto seismic load pattern of type "User".
	70464	An incident was resolved where an error was generated in certain uncommon cases when trying to modify the definition of a load combination, causing the software to terminate. No results were affected.

*	Incident	Description
*	70551 70553 70555	An incident has been resolved that addressed several unreported "Abnormal Termination" errors that could occur when working with the graphical user interface. When these errors occurred the software would terminate and changes to the model since the last file save operation could be lost. In case such an abnormal error condition may still be detected, an option is now provided to save the model as a new file before the software closes. This will usually capture changes made to the model since the last save, with the possible exception of the changes that caused the error to occur.
	70776	An incident was resolved where the command Options > Colors > Output was opening the color form to the Display tab instead of the Output tab. No results were affected.

Graphics
Incidents Resolved

*	Incident	Description
	61679	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.
	69875	An incident was resolved where the software could terminate when using DirectX graphics mode if the connection to the DirectX graphics device was lost, such as when the computer was locked and then logged into again, when beginning or ending a remote desktop session, or changing monitors. Now when this occurs, the graphical user interface will switch to GDI+ graphics mode, after which the user can optionally return to DirectX graphics mode.
	70312	An incident was resolved where the software could terminate with an error message when performing graphical manipulations (such as pan or zoom) after right-clicking on a frame object in a view that was showing frame applied loads and then performing an assignment or other change on the object while in the "Object Model - Line Information" form. This can be done by double-clicking on an assignment in that form.
	70361	An incident was resolved where the graphical display of drawn section cut results was drawn to a very small scale. Results were unaffected.
	70780	An incident was resolved where some object and element local axes were not displayed when requested in DirectX graphics mode. No results were affected.

Modeling
Incidents Resolved

*	Incident	Description
	69929	An incident was resolved where setting the middle strip width equal to the division width in the flat slab new model template would generate an error.
	70370	An incident was resolved where section properties (areas A, A2, A3; moments of inertia I22, I33; torsional constant J) were not being recalculated for certain types of frame sections after editing their section dimensions in the interactive database. The affected section types were Steel Hybrid I, Steel Hybrid U, Built-up I, Precast concrete I, and Precast concrete U. Section properties were recalculated for any section where the definition was viewed using the command Define > Section Properties > Frame Sections > Modify/Show, and clicking OK on the form. The actual section properties used for analysis and design could be seen in table "Frame Section Properties 01 - General".

Section Designer
Incidents Resolved

*	Incident	Description
	69984 70085	An incident was resolved in which section designer sections could become corrupt after running steel frame, concrete frame, or API punching shear design. This could cause the program to

*	Incident	Description
	70216	terminate when later editing the section designer sections. This did not affect analysis or design results.
*	70113 70303	An incident was resolved for Section Designer (SD) that addressed several issues: (1) Modifying an existing SD frame property containing two or more shapes and then adding additional shapes would cause all but the first of the original shapes to be deleted. (2) Modifying an existing SD frame property containing two or more shapes and then deleting some shapes could cause the frame property to become corrupted; this could result in the calculated properties becoming incorrect after the property was saved. (3) For the very special case where an SD property contained a rectangular shape with rebar and a Mander-confined concrete model for the core, the software would terminate with an error message if the rebar for all edges and corners was then set to "None". These issues could be present in v17.0.0 or v17.1.0 models and will be corrected when opening the model in newer versions.
	70448	An incident was resolved in Section Designer in which the Mander-Confined Concrete Model form would become unresponsive when the user-defined Reinforcement bar area for Confinement Bar was set to a value that was invalid (too large) for use in the Mander equations. Now an error message is provided in this case and the previous values are restored. In addition, the behavior when specifying a rebar size or area in the Mander-Confined Concrete Model form has been improved to show the area when a rebar number has been selected, and to find the corresponding rebar number when an area is entered to within a tolerance of about 0.1%.

Loading

Incidents Resolved

*	Incident	Description
	69914	An incident was resolved where the software would terminate when trying to modify an auto seismic load pattern of type "User".
	70726	An incident was resolved for the Italian NTC 2008 response spectrum function definition and the NTC 2008 auto lateral seismic load in which the magnification factor, F0, was extremely large, resulting in the calculated acceleration values being incorrect. This could happen when entering the parameters based on latitude/longitude or island data, and the computer had region settings that used a comma as the decimal separator.

Analysis

Incidents Resolved

*	Incident	Description
*	42795 51928 62680 67745 68369 70547	An incident was resolved where using static seismic load patterns of type "User Loads" with loads applied at the diaphragm centroid could cause the software to terminate abnormally during analysis. When this occurred, no results were available.
	70387	An incident was resolved where frame design could not be run after using the Model-Alive feature to run the analysis. When this occurred, an error message was generated and design results were not available.

Frame Design
Incidents Resolved

*	Incident	Description
	70185 70832	An incident was resolved in which the default steel frame load combinations for AISC 360-10 LRFD were using wind load factors from ASCE 7-05 instead of ASCE 7-10. Results agreed with the load combinations as generated and visible to the user.
	70197	An incident was resolved for Eurocode 3-2005, NTC 2008, and IS 800-2007 steel frame design in which an error would occur when trying to display deflection check results by right-clicking on a member after design and then clicking the Details button. This was a display issue only and did not affect results.
	70449	An incident was resolved for concrete frame design where frame objects assigned variable (nonprismatic) concrete sections were not being assigned the appropriate design procedure (concrete) the first time frame design was run, but instead were identified as steel. This meant that no concrete frame design results were produced for such members, but meaningless steel frame design results could be produced. The proper design procedure was automatically corrected for the second and subsequent runs of the design. All codes were affected.
*	70705	An incident was resolved where concrete frame design could fail or produce incorrect results for column members when run a second time, or when displaying design details by performing a right-button click on a member after design. This did not affect the values displayed after first running design or the values produced in database tables. For models with no Section Designer sections, the right-button click or second design could fail by generating an error message "Unable to calculate interaction diagram for section", and the design results produced were all zeroes. For models with Section Designer sections, the results produced by the right-button click or second design could be incorrect for any non-Section Designer sections in the model; results for the Section Designer sections themselves were not affected. This error was introduced in v17.1.0 and did not affect previous versions.
	71048	An incident was resolved in which the Norsok N-004 steel frame design was inadvertently disabled. This is reinstated and available with the Ultimate level license.

Results Display and Output
Incidents Resolved

*	Incident	Description
	69514	An incident was resolved in which the output from the File > Print Graphics command did not include a title indicating what type of output was presented on the printed output. This was available in v16, but was not included omitted in v17.0.0 and v17.1.0.
	70245	An incident was resolved in which shell and solid contour results were not shown when using the File > Print Graphics command if the results were displayed with the 'Show Continuous Contours' option. This was a display issue only and did not affect results.
	70311 70362	An incident was resolved where trying to add a picture using the advanced report writer would cause the program to terminate.
	70351	An incident was resolved in which the output from the File > Print Graphics command did not include a contour legend on the printed output, where applicable. This was available in v16, but was omitted in v17.0.0 and v17.1.0.

Database Tables
Incidents Resolved

*	Incident	Description
	70412	An incident was resolved for interactive database editing in which the program would sometimes terminate when editing certain tables. This was a user interface issue and did not affect results.
*	70771	An incident was resolved in which the database table Section Cut Forces - Design could present incorrect M2 results for a response spectrum case if a load combination was also selected for output alongside the response spectrum case. In this case, the response spectrum M2 value was being set equal to the load combination M2 value. This error was introduced in v16.1.0.

Data Files

Incidents Resolved

*	Incident	Description
	70248	An incident was resolved where the information saved in the "Comments and log" was missing the program version and level information.

Application Programming Interface

Incidents Resolved

*	Incident	Description
	70347 70509	An Incident was resolved where the API function SapObject.ApplicationStart() was ignoring the arguments that were being passed in (units, filename, visible flag). Default values were being assumed.