Description of New Features and Bug Fixes at Version 4.03l

Description

1	Bug Fix	Hookes Joint Solver	Modifications have been applied to the Hookes Joint solver to improve the robustness of the kinematic results.
2	Bug Fix	Graphical Fonts	Previously it was possible for text drawn in to some of the graphics areas to be drawn with a very large font size such that the entire display becomes filled. This has been fixed at this release.
3	Bug Fix	Missing Menu items	Some users have reported main menu items becoming unselectable as they move between modules. This was traced to the graphics window being maximized during switching. From this release the graphics window, if maximised, reverts to its standard size before switching modules. A similar action is applied on any File / Open and File / New event, because of the same reason.
4	Change	Template Solver Type 8	The template editor has been modified such that for Solver Type 8 it will support now support the three point definitions in any of the following combinations of three columns, 6/7/10, 6/7/8 and 6/7/9. This is to be both compatible with earlier versions as well as be more consistent with its labelling.
5	Bug Fix	<install> path issues	Some users have reported losing the first character from a file name when using the <install> label replacement. More rigorous checks have been implemented in an attempt to eliminate this problem.
6	Bug Fix	Export to Excel	The Export to Excel as a new worksheet in… was previously incorrectly implemented. The required data did not appear in the spread sheet, only a blank sheet being generated. This has now been fixed.
7	Bug Fix	Add End to File	When adding a front or rear suspension file to an existing model that either is a full vehicle or thus generates a full vehicle model, this normally leads to hard points being shifted in 'X' and 'Z' to match the required wheelbase and ground plane origin. Previously bushes that had their axes defined using global positions rather than local or other points were not corrected. This has now been fixed.
8	Bug Fix	Virtual SKCMS	The calculation used for setting the user defined forces used in the virtual SKCMS has been revised such that it works correctly for all ranges specified.
9	Change	Default Compliance Values	Previously the 'compliance' data section of the model file did not include the settings for the 'default compliance values'. To aid in making the model file more 'standalone', these default values are now included in the model file.
10	Bug Fix	Local Co-ordinates	When shifting hard points to match required wheelbase and ground plane settings Local co-ordinate systems where not corrected. This has now been fixed.

11	Bug Fix	Deleting Points	With the introduction of local co-ordinates it was possible when deleting points to lose the correct point definitions. This has now been resolved.
12	Bug Fix	Edit Undo	Previously the undo buffer would write out buffered changes using the current user settings. This meant that it may not buffer changes to the template. On a recovery this could then produce a miss match between the model file and the referenced template. It was only an issue if the template was not being saved with the model file. From this release it is changed such that the template is always included as part of the undo buffer.
13	New	Startup	To provide a method by which users can limit which licenses they take when starting the application. Support is now provided for three extra command arguments. The three keywords are 'KINEMATIC' 'SHARK' and 'RAVEN' . By using one of these start-up command line arguments the user can force which single module the program opens in and by doing this will not take a license for the other unused and then unavailable modules. This obviously only has any impact if you have valid licenses for more than one of the modules.
14	Change	Undo Buffer	A number of the template editing options previously did not cause a buffering event so they could not be undone. This has now been resolved. This includes items such as merge spring, compliant hub.
15	New	Graph Cursor	When in animation mode an optional cross hair can be added to the graphs. The switch setting for this is under Graphs / Visibility / Animated Cursor.
16	New	Template Validation	The template extract and validation routines have been enhanced to detect undefined points and indicate detected errors on the template 'validation' listing.
17	New	Point Editing	The single point editing display when in kinematic mode has been extended to provide optional access to other point properties that are associated with the template. These 'Extended' and 'Template' sections give users greater editing ability without recourse to the full template editor tool.
18	Bug Fix	Point Delete	Previously deleting a point could cause problems when using local co-ordinate systems. This has now been resolved.
19	Bug Fix	Restart	Some problems have been seen with the crash restart function where the latest buffered file has not been correctly identified. Improvements have been implemented to ensure that a correct file is loaded under restart.
20	Bug Fix	Zoom	The 3d graphics zoom function has been modified so that it does no longer incorrectly detects the cursor passing across any open graphs as a 'cancel' action.
21	Change	Results displays	The wording used in the menus to identify the choices for which 'end/corner' to display in the listings has been modified to clarify the available options.

22	New	Force Sets	A new function has been added to the force set editor, that enables the user to save the defined force sets to an external file. This file can then be shared with another user to enable them to read in these defined force sets as either additions to their own or as a complete replacement.
23	Bug Fix	Edit Undo	The undo buffer action has been added after setting the static toe/camber angles.
24	Bug Fix	Edit Undo	The undo buffer action has been added after editing local co-ordinate axis definitions.
25	Bug Fix	Convert to slotted joint	This automatic conversion routine has been modified to include an additional argument in the template properties for the converted point. This is to ensure sufficient constraints are defined. Was previously a problem with template type 33.
26	Bug Fix	Steering Type	Previously changing steering type using the 'Data' menu rather than setting it via the 'File / New' dialogue display could cause problems because of the additional steering points not being defined. This has now been fixed.
27	New	External Force Editor	A 'cancel' function has been added to the External force editor display. This enables users to revert back to the external force definition before any changes were made.
28	Change	Template Editor	The template 'slot' number has been added to the template label in the template selection box on the main template editor display.
29	Bug Fix	Default Force Sets	Previously the default force set 3 filled the wrong variables. This would lead to force set 3 having a zero magnitude on the second corner. This has now been resolved.
30	Change	File / New	The File / New dialogue box functionality has changed so that you no longer have to make a change to one of the settings for 'done' to be registered as performing a 'new' action. Prior to this release the 'done' button did not make any changes unless you altered one of the settings.
31	New	File / Close	A 'close' menu item has been added to make the application more in line with standard desktop applications.
32	Change	Non-linear rack bush	Previously the non-linear rack bush properties were not saved to the model file if the non-linear rack bush was disabled. From this release if any data is defined for the non-linear bush it is always saved to the model file irrespective of the 'include' non-linear rack bush setting.
33	Bug Fix	Non-linear rack bush	A additional corrective force was required to balance out the additional force that is currently added by the solver to achieve the non-linear rack bush performance. This is required to avoid a soft mounted rack housing having incorrect displacements from the additional corrective force.
34	New	Graphic Lines	Three new graphic lines have been added. Being a axis aligned vector at the intersection of two 3d vectors.
35	Bug Fix	Un-braked	Previously a full axle model showed large forces for the second

		Hub	corner when running with the hub braking turned off.
36	Change	Control Elements	Previously when creating a new model any existing control elements were retained. This was not intended and from this release the File / New action zeros the control elements counter.
37	Bug Fix	Raven Tyre Display	Previously the program would fail when using the Mal tyre model and scrolling down to the bottom of the coefficients list in the tyre viewer. This has been fixed.
38	Bug Fix	Carpet Plot Display	Previously if the user selected the tyre model to be the 'carpet plot' type. If no data was loaded, normally because the auto-load switch was turned off, the program would fail. This has now been resolved.
39	Bug Fix	Change by Length	The modification to the graphical editing display to incorporate page up and page down through the entries meant that the ability to edit the length of a line as a constraint when in 'change by length' mode was lost. This has been reinstated.
40	Bug Fix	Graphical Display Options	With the addition of the new motion types and the ability to have extended motions, the selection of display Full + half + static etc. was no longer reliable. This has been improved at this release.