DYNAFORM 5.9.2

Release Notes 7/2014

Significant Enhancements

1. The new function for ‘Auto-Position’, automatically position blank and tools for multi-stages.
2. Automatic Iterative ‘Trim Line Development’ add-on.
3. The Blank Development supports iterations of multi-stages.
4. Improved Utility Batch for 2D and 3D trimming.
5. New ‘Hot Forming’ module add-on, supporting full process of Hot Forming: Gravity, Hot Forming and Press Hardening.
6. Improved Tube Rotary Bending, supporting the calculation of the tube (product) center line and to generate the bending process automatically.
7. Improved OP module, supporting the definition of the local region for optimization, as well as adding a restart function.

New Capabilities, Features and Functions in the BSE Module

1. Added an Excel format option for the Nesting Report.
2. Added a default option for nodal result or element result with nodal result.
3. Added a default button in the Formability Report window, to recall the saved default configuration settings after making changes to the options for the specific cases.
4. Added the ability to tip the curve binder with the Sheet part.
5. Added the ability to calculate the mesh size for the Sheet part.
6. Changed the dialog for defining the material in BSE, to be consistent with the dialog in ‘AutoSetup’.
7. Added the ability to re-space the outline in ‘MSTEP’.

Newly Enhanced Capabilities, Features and Functions in Sheet Forming.

1. Added a new function ‘Auto-Position’, to automatically position the blank and tools for multi-stages.
2. Added the ability to position models with vertical walls.
3. Added the ability to calculate the binder travel by automatically filling the binder.
4. Add the ability to support multi-stages in Blank Development.
5. Added the ability in ‘Blank Development’ for half of the blank.
6. Added the ability in ‘Blank Development’, to support a blank which is not in X-Y plane.
7. Added a new function ‘Trim Line Development’, using iterative approach to develop a trim line in the trimming stage, where the final result matches the defined target line.
8. Improved the parameters of the ‘Accurate’ and ‘Fast option’ in the Control page of ‘Sheet Forming’.
9. Added the ability to show the rotation center when transform blank in multi-stages.

10. Added the ability to auto move the blank to the current stage when displaying the preview animation.
11. Added the ability to automatically move the blank to the current stage when switching to another stage.
12. Added the ability to tip the blank around the specified rotate center in Tool Position.
13. Added the ability to export and import the result of the theoretical equation in ‘Line Bead’.
14. Added the ability to allow the user to set the specific material’s relation between the draw bead shape and full lock force percentage in the ‘Draw Bead Shape Library’.
15. Added the import function in the Trimming stage, allowing the user to import a trim line.
16. Added a function “Replace current tool function’ in Preparation, allowing the user to import the tool geometry to replace geometry and elements of the selected tool.
17. Added rubber materials: *MAT_027/*MAT_Mooney-Rivlin_rubber, *MAT_077_O/*MAT_OGDEN_RUBBER and *MAT_127/*MAT_ARRUDA_BOYCE_RUBBER.
18. Added the ability to support Pre-Bending in Gravity.
19. Added the ability to run a gravity simulation by specifying the height from the ground.
20. Restored ‘Stroke vs. Force’ in the ‘Process’ dialog in ‘AutoSetup’.
21. Added six commonly used steel materials of *MAT_125: DP980 (NUMISHHET’08), DP780 (NUMISHHET’08), DP780 (NUMISHHET’11), DP600 (NUMISHHET’08), DDQ (NUMISHHET’08) and HSLA (NUMISHHET’08).
22. Removed ‘Shear Correction Factor’ in Section properties of Blank Definition.
23. Added material history variables for all materials
24. Changed the default control action of binder in drawing step to use velocity.
25. Fixed a bug in the motion direction definition of Hydroforming tool in the local coordinate system.
26. Fixed the deviation of the roller motion path in the Roller Hemming and optimized the trace curve and direction vector of the roller.

Newly Enhanced Capabilities, Features and Functions in Hot Forming.

1. The new ‘Hot Forming’ module was added in AutoSetup, removing thermal analysis from ‘Sheet Forming’.
2. Added the ability to support full process of Hot Forming: Gravity, Hot Forming and Press Hardening.
3. Added the ability to support the thermal gravity loading simulation.
4. Added the ability to support thermal thick shells for the tools (TSHELL=1).
5. Changed the default friction coefficient to 0.46 for hot forming.
6. Added the ability to define the initial temperature for both the blank and the tools.
7. Added the ability to support *DEFINE_TABLE_3D for *MAT_106/*MAT_244.
8. Added an option of ‘TSF’, and changed the default value to 20.0.

Newly Enhanced Capabilities, Features and Functions in Tube Rotary Bending and Tube Forming.

1. Combined ‘Tube Forming’ and ‘Tube Rotary Bending’ into one menu ‘Tube Bending/Forming’.
2. Added a new function to calculate the tube (product) center line in ‘Tube Rotary Bending’.
3. Added the ability in ‘Tube Rotary Bending’ to generate the bending process automatically.
4. Added the ability in ‘Tube Rotary Bending’ to allow the user to edit the bending process.
5. Added the ability in ‘Tube Rotary Bending’ to preview the tube bending process.
6. Added the ability in ‘Tube Rotary Bending’ to preview the tools movement.
7. Added the ability to use the solid elements tube for Tube Forming.
8. Added a new ‘Tube Generator’ in ‘Tube Forming’ to create tube with defined parameters.

Enhanced Functions for Blank Generator

1. Added the ability to create solid elements for a taper blank.
2. Added the ability to calculate the blank mesh size with the selected fillet surface.
3. Added the ability to create the blank outline with the selected blank surfaces.
4. Added the ability to create two laminated blanks.
5. Added the ability to support the positioning for the two laminated blanks onto the tools.
6. Added the ability to change the boundary nodes number by dragging the mouse in ‘Part Mesh’.
7. Added the ability to create a tailor welded blank in Quick Setup.
8. Added the function to create 6 lines and 8 lines solid mesh.
9. Added the ability to do the refining meshes along the blank outline in Blank Mesh and Part Mesh.

Enhanced Functions for OP module

1. Added a ‘Local Definition’ function, allowing the user to define the local region for optimization.
2. Added a ‘Restart’ button, allowing the user to restart the job.

Enhanced Functions for Die Simulation

1. Added a new ‘Report’ function in ‘Die Simulation’, allowing the user to generate a formability report and check the formability result.
2. Added two new simulation types: ‘Single Spring Bend’ and ‘Double Spring Bend’.
3. Added the ability to deactivate the specified buttons.
4. Added the ability to specify the parameters by the default configuration.

Enhanced and Improved Pre-Processing Capabilities

1. Added the ability to refine mesh in ‘Element Trimming’ and ‘Element Lancing’.
2. Added the ability to select elements or surfaces by dragging window.
3. Added the ‘Expand’ function in ‘Tool Preparation’.
4. Improved the selection method in ‘Auto Fill’, where all the inner holes no longer selected by default. Users must select the inner holes for filling.

5. Added the ability to split the line by UV-plane.
6. Added a new function ‘Check Free Surface’ to extract the free surfaces of the solid elements to generate the shell elements.
7. Added the display option in ‘Deviation Check’, allowing the user to specify the range of deviation value.
8. Added the ability to turn off the mouser operation message.
9. Added the ability to print the read failure message from the log file.
10. Added the ability to save the defined mesh parameters in ‘Tool Mesh’.

Enhanced Functions for User Setup

1. Added the ability to display the node or the element result in Blank Operation/DYNAIN Contour.
2. Added a ‘Normal’ option in Position Tools/Min. Distance, to measure the minimum distance between two selected tools in the normal direction.

Enhanced Functions for Utility Batch

1. Improved the 2D trimming and 3D trimming.
2. Fixed a bug in Refine Mesh.
3. Added the ability to save the SPC in trimming result.
4. Added the ability to refine mesh in Lancing.
5. Added the ability to trim the tailor welded blank.

Enhanced and Additional Features for Job Submitter

1. Added the ability to submit a job with Job Submitter in DYNAFORM.
2. Added the ability to allow the user to define NCPU (No. of CPUs) in AutoSetup.
3. Added the ability for the user to define IFORCE (interface force) in AutoSetup.
4. Added an option to delete the adaptdmp file.
5. Added an option to output d3dump or not.
6. Added the ability for different users to open multiple-processes of Job Submit.

Newly Implemented Capabilities, Features and Function of Post-processing (eta/Post)

1. Fixed a bug in reading the dynain solid element data.
2. Fixed a bug in reading the d3plot hot forming history variables.
3. Added the ability to export ‘Contour Value’ as CSV file.
4. Added the ability to support minimum/maximum marks in element result contour plot.
5. Added undeformed shape color configure, accessed by File->Edit Default Config->DRAW SETTING.
6. Moved the menu item ‘Edit Default Config" from the ‘File’ menu to ‘Option’ menu.
7. Added the EFLD function in the FLD dialog for the d3plot result.

8. Added a ‘Show Stone’ option in ‘Stoning’ dialog, plotting the current stone symbol when activated.
9. Added a ‘Show Mark’ option in the ‘Stoning’ function.
10. Set the default value of ‘Arrange List by Value’ (in List Table dialog) to ON.
11. Added ‘User Define Contour’ in the system configuration setting dialog. When on, the current user defined contour setting will be saved to system home directory after exiting eta/Post.
12. Extended the opening file length limitation to 1024.
13. Added the ability to export the E3D file for the FAS result.
14. Fixed the temporary path problem when exporting pdf file.
15. Changed option name "Max-Min Ballon Title" as "Max-Min Balloon Title".
16. Added "Show Area" feature in list value option.
17. Fixed fatigue algorithm problem under different unit for d3plot model.
18. Added the ability to support to print node coordinate to message window when select one node to list value.
19. Added the ability to support to plot the current frame automatically when switch to different component under single frame mode.
20. Fixed the crash bug when open error model file in running macro.
21. Added "Keep Aspect Ratio" in FLD curve option to control the locked aspect ratio(1:1) of FLD window on or off.
22. Added the ability to support the history variable result.

Newly Enhanced Capabilities for ETA License Manager

1. ETA License Manager was expanded to manage all ETA programs: eta/Dynaform, eta/VPG and eta/PreSys.
2. Added the ability to add more than one IP group when requesting a LS-DYNA license.
3. Added the ability to automatically install and start windows service after importing the license.