

# **DYNAFORM 5.9.3**

**Release 3/28/2016**

## **Significant Enhancements**

1. Added automatic SCP iterations in Sheet Forming.
2. Added a function to support Tailor Rolled Blank in Sheet Forming.
3. Added a function for Lancing in the Forming Process in Sheet Forming.
4. Added the ability to trim solid elements.
5. Added process templates in AutoSetup, which can be used for typical cases in Sheet Forming.
6. Made improvements in Blank/Trim Line Development including:
  - a) Combined Blank Development and Trim Line Development into Blank/Trim Line Development.
  - b) Added the ability to develop the blank outline and trim line simultaneously.
  - c) Added the ability to develop partial blank outlines and partial trim lines.
  - d) Added the ability to develop the blank outline with a cut pattern.
7. Added the ability to create and edit line beads by segment.
8. Added functionality for blank cooling and trimming in Hot Forming.
9. Added Composite Simulation (thermoplastic pre-pregs process).
10. Added functionality for implicit analysis for forming and flanging.
11. Added non-circular tube in Tube Bending.
12. Added a springback check for bent tubes and added a new compensation process in Tube Bending.
13. Improvements in the one step solver "MSTEP".
  - a) Improved the result for cases in which some unfolded straight lines were curved instead of straight.
  - b) Improved the outline for deep draw parts.
  - c) Fixed a bug that caused the outline to self-intersect during "average normal" tipping.
  - d) Fixed a bug that caused the unfold outline to be much shorter than the actual outline.

## **New Capabilities, Features and Functions in the BSE Module**

1. Changed the GUI name from MSTEP to Generate Outline.
2. Simplified the GUI of the constraint definition for MSTEP.
3. Added the ability which allows the user to add the constraints by selecting the boundary nodes.
4. Added the sheet metal part image on the Nesting Report.
5. Simplified material definition.

6. Modified the GUI of Unfold to be similar to the Trim Line GUI.
7. Added the ability to calculate springback with MSTEP.
8. Moved the LCS definition from Constraint definition to MSTEP Advanced dialog.
9. Added improvements in the one step solver "MSTEP":
  - a) Improved the result for cases in which some unfolded straight lines were curved instead of straight.
  - b) Improved the outline for deep draw parts.
  - c) Fixed a bug that caused the outline to self-intersect during "average normal" tipping.
  - e) Fixed a bug that caused the unfold outline to be much shorter than the actual outline.

### **Newly Enhanced Capabilities, Features and Functions in Sheet Forming.**

1. Added automatic SCP iterations in Sheet Forming.
2. Added the ability to show the histogram and range of the SCP result.
3. Added functionality for Tailor Rolled Blank in Sheet Forming
4. Improvements in Blank/Trim Line Development:
  - a) Combined Blank Development and Trim Line Development into Blank/Trim Line Development.
  - b) Added the ability to develop the blank outline and trim line at the same time.
  - c) Added the ability to develop partial blank outlines and partial trim lines.
  - d) Added the ability to develop the blank outline with a cut pattern.
5. Added the ability to create and edit line beads by segment.
6. For multistage processes, added the functionality to automatically determine ADPSIZE, which is the mesh size divided by the number of element adaptive steps.
7. Added the ability to carry over the Control tab settings to the next stage when defining a new stage.
8. Added the data of 'Distance From Home' in the index file
9. Added an option to output each forming stage into separate folders.
10. Added Process Templates, which can be used for typical cases.
11. Added an option to set tool offset from -2.2t to -1.1t, while the dyn file still uses -2.2t.
12. Added functionality for implicit analysis for forming and flanging.
13. Added the ability to combine the lancing function in the forming stage.
14. Added the function 'Copy Control' in Sheet Forming to copy existing stage parameters when creating a new stage.
15. Added the ability to trim solid elements.
16. Added the ability to support contact types defined as "None".
17. Added functionality to support Cowper-Symonds parameters C and P for MAT36 in AutoSetup.
18. Added the ability to automatically read the blank thickness, material information and NIP for the springback setting after importing dynain file.

19. Added the ability for multiple line selections in the inner trim function.
20. Added additional materials in the material library.

#### **Newly Enhanced Capabilities, Features and Functions in Hot Forming.**

1. Added the ability to support blank cooling and trimming in hot forming.
2. Added Composite Simulation (thermoplastic pre-pregs process).

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

1. Added the ability to support non-circular tube bending: Ellipse tube and rectangle tube.
2. Added the ability to calculate the centerline of non-circular tube: Ellipse tube and rectangle tube.
3. Added the ability to check springback of a bent tube and add a compensation process in Tube Bending.

#### **Enhanced Functions for Blank Generator**

1. Added the ability to move the outline and blank elements in one plane.
2. Added the ability to refine elements around an interior hole.
3. Added the ability to check and repair the outline automatically.
4. Added a Min. Element Size option in mesh size dialog.
5. Added the ability to define a hole on the boundary of the outline.
6. Added the ability to define the Blank in the working coordinates.
7. Added the ability to specify the mesh direction.

#### **Enhanced Functions for Die Simulation**

1. Added the Sheet Forming symmetry definition GUI in Die Simulation.
2. Added the ability to define the symmetry plane by '2 Points on UV-Plane'.
3. Added the ability to read the material and thickness, which are defined in BSE.
4. Added the ability to do a continuous animation for Double Spring Bend using the index file.
5. Fixed a bug that caused the blank to penetrate the tool on some models.
6. Added the ability to specify thinning range based on the user's material table.

#### **Enhanced and Improved Pre-Processing Capabilities**

1. Added the ability to print the message with the setup information when reading the database.
2. Divided the Setup Default Config options into 'Auto Setup', 'Quick Setup' and 'User Setup'.
3. Divided the Auto Setup Default Config options into 'Regular', 'Sheet Forming', 'Hot Forming' and 'Tube Bending/Forming'.
4. Added the ability to renumber the Part ID from the existing Part ID.
5. Added a new function to check overlapping surfaces and to trim overlapping surfaces.

6. Added the 'Check All' function in 'Mesh Repair/Check'.
7. Added the ability to list the Part ID of failed elements in 'Mesh Repair/Check'.
8. Added the function 'Jacobian Check'.
9. Added the ability to read solid elements with the new keyword format.
10. Improved the mesh shade in the shade mode.
11. Improved the 'Gap Repair' function.
12. Removed the limitation that the original elements must be related to the original surfaces in 'Surface Mapping'.
13. Improved Tool Mesh for fillet surfaces.
14. Added functionality, which makes the normal of the created elements the same as the adjacent elements.
15. Added the function to roam the license from server.

#### **Enhanced Functions for Utility Batch**

1. Improved 2D Trimming.
2. Added the ability to do Side Piercing in 2D Trimming.
3. Added the ability to do Open Curve Trimming in 2D Trimming.
4. Added the ability to support Two Seeds in 2D Trimming for a Double Attached Part.
5. Improved 3D Trimming.

#### **Enhanced Functions for CAD Translator and NX Translator**

1. Updated the CADTranslator to the latest version R26.
2. Updated the NXTranslator to support NX9.0/ 10.0.

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

1. Added the ability to export stl files from eta/POST.
2. Added the ability to set the contour range for each component in the config file in eta/POST.
3. Added the ability to read any d3plotxx file, versus only d3plot files in eta/POST.
4. Supported the keyword `"*CONTROL_FORMING_INITIAL_THICKNESS"` in the index file in eta/POST.
5. Added the ability to support trimming by UtilityBatch in eta/POST.
6. Added the ability to export the line bead as an igs file from eta/POST.
7. Added the ability to display the yield surface in eta/Post.
8. Added the ability to calculate the loading center in eta/POST.
9. Support user defined shortcut in menu file etapost.mnu.
10. Added the ability to create a section on solid elements and allow user to select the solid face of that section.
11. Added the ability to draw min/max balloon label under user defined contour.

### **Newly Enhanced Capabilities for ETA License Manager**

1. Added functionality to support new license control with RLM with license roaming.
  - a. Added the ability to allow a user to borrow a license from the server to work outside the network.
  - b. Added a Failover License Server, which supports a redundant license server within the network to minimize license server down time.
2. Added functionality to automatically uninstall the license server and client license when switching to node lock and remove the node lock license when switching to server/client model.