

FibreDRIVE

The Drive for Composite Automation

FibreDRIVE is an offline programming tool that works directly with Loop Technology composite preforming end effectors to simplify the automation process. Key functions include creating:

- Pickup and placement configurations during ply deposition or kitting for:
 - FibreFORM
 - FibreROLL
 - FibreMOVE
- FibreTACK configurations
- FibreCUT cutting paths



SMART PROGRAMMING

Manipulate end effectors relative to lay up tools and preform shapes.



USER FRIENDLY INTERFACE

A simple, uncluttered interface. Employs traditional CAD style navigation.



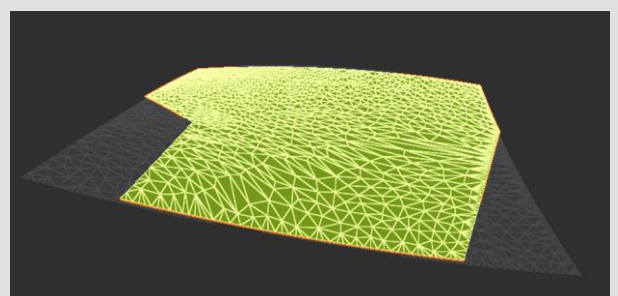
SIMULATION

FibreDRIVE includes simulation of end effectors to visualise and detect collisions.

How does ply configuration work?

The desired ply geometry can be directly exported from the design tool and imported into FibreDRIVE. FibreDRIVE uses a flattening algorithm which takes the draped mesh of a ply, projects it to a plane, and equalize its vertices to match its flat counterpart in a nesting.

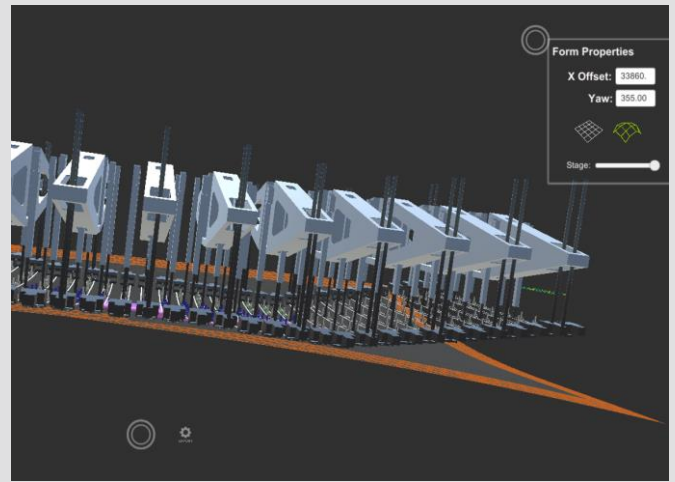
This allows the surface to be profiled and generates the appropriate configuration which can be fine tuned using a variety of powerful in-built features.



FibreFORM Configuration

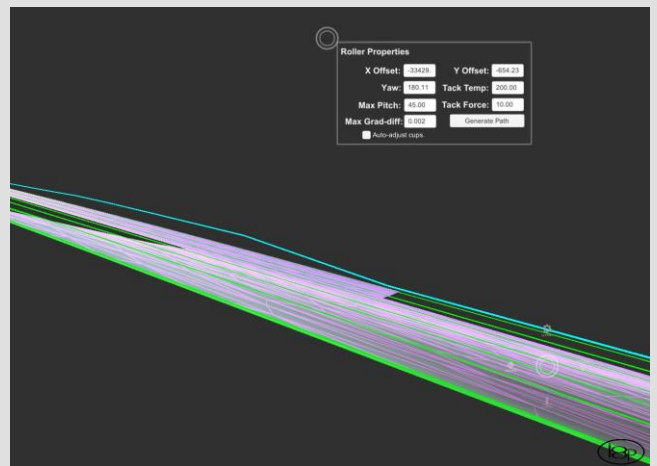
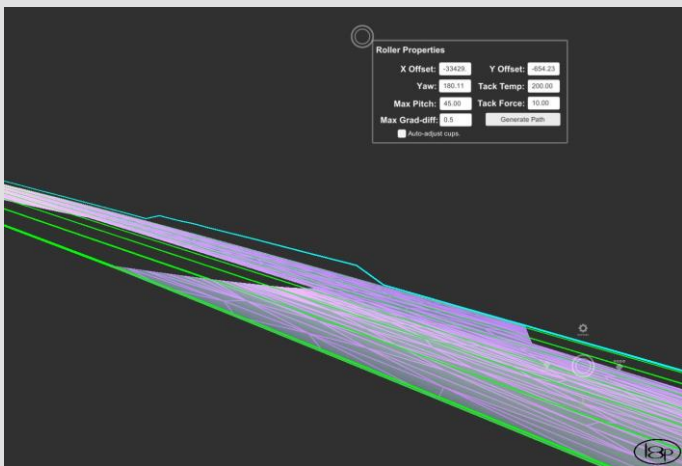
FibreDRIVE enables the optimal configuration to be created for FibreFORM. The simulation allows the pick position and alignment of grippers to be visualised and easily adjusted to ensure suitable support of the fabric. It will also recognise and alert the user to internal collisions and exceeded limits.

Fine tuning options are provided to simplify the manipulation of FibreFORM in order to stay within the desired tolerances. This includes: offsets; the ability to adjust all splines not directly interacting with the ply; and addition of lift to increase the height above the ply, or mould tool, in case of unavoidable collision.



FibreROLL Path Generation

FibreDRIVE automatically generates a suitable roller path along the surface of the ply stack or tool. Fine tuning options include constraints such as maximum pitch and yaw in order to avoid collisions, and a maximum gradient difference to smooth out the roller path to prevent sudden movements of the end effector.



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