Modeling in Protean Clay™ using the Novint Falcon™

Tactus Technologies
www.proteanclay.com

Modeling in Protean Clay using the Novint Falcon

Protean Clay supports modeling using the Novint Falcon™. This feature is still under development, so functionality is limited at this time. This document explains all of the functionality currently included in Protean Clay.

1. Basic Operations

- Selecting the Falcon as the input device
  In the **device** section of the **input** tab, select **Novint Falcon**. It will take a few seconds for the Falcon to initialize. After that time, the light on the Falcon will be either blue or red. If it is red, move the grip all the way in and all the way out to calibrate it. Once the light turns blue the Falcon is ready to use.

- Using the Falcon to control the mouse cursor
  By default, Proten Clay uses the Falcon to move the Windows mouse cursor. Moving the grip is equivalent to moving the mouse, and pressing the buttons on the grip is equivalent to pressing buttons on the mouse. This way the Falcon can be used to control any part of the Protean GUI without switching back to the mouse.

2. Using Haptics to model clay

- Moving the tool in 3D
  To move the tool in 3D using the Novint Falcon, first select the **Follow** handles from the **handles** section of the **objects** tab. Then click anywhere in the main work area to grab the follow handles. Once the follow handles are grabbed the clay cursor will follow the Falcon position in 3D. The clay cursor moves in view space. This means changing the view will not affect how the cursor moves relative to the main work area. Moving the Falcon grip up, down, left and right will move the cursor in the same direction in the view. Moving the grip in and out will change the cursor's depth.

- Feeling the surface of the clay model
  To enable haptic feedback, first enable **snap to clay** in the **snapping** section of the **objects** tab. Then adjust the **Force** and **Distance** parameters in the **Novint Falcon** section of the **Input** tab. These settings are very subjective. If the haptics is too soft, try increasing force or decreasing distance. If the Falcon grip is bouncing a lot, try decreasing force or increasing distance. The best settings may change if the view is changed or the clay resolution is changed.

- Using **Allow Push Through**
  By default, the cursor is not allowed inside the clay volume. If the cursor is inside the clay volume, the haptic feedback will generate a force to push it out. When **Allow Push Through** is enabled, the cursor can be pushed through the clay surface with enough force. Once inside, the haptic feedback will generate a force to keep it there.

*Falcon is a trademark of Novint Technologies.