

Request #: HUTRR111
Title: Touchpad Button Press Threshold
Spec Release: 1.3
Requester: Matthew Williams
Company: Microsoft

Pages Affected: Digitizer (0x0D)
Values checked: Matthew Williams (Chair)

Current Status: **Approved**
Priority: Normal

Required Voter: Intel
Required Voter: ELAN
Required Voter: Synaptics

Voting Begins: 23rd November 2022
Voting Ends: 30th November 2022
Voting Result: 5-0

Summary:

Add a new Digitizer Usage to allow system-configurable touchpad button-press activation pressure.

Scenario:

Configurable touchpad button-press threshold permits greater customization of a user's experience and supports accessibility scenarios. "Light touch" users and those with limited finger-strength can lower the required activation force. Conversely, users who have difficulty performing subtle gestures can increase the required activation force. This dynamic customization allows the same device to adjust to multiple users.

Proposal:

Add Digitizer Usage to allow system-configurable touchpad button-press activation pressure threshold.

Add to Table 16.1: Digitizer Page

| Usage Id | Usage Name | Usage Type |
|----------|------------------------|------------|
| 0xB0 | Button Press Threshold | DV |

Add to Table 16.5 Touch Digitizer Usages

| Usage Name | Usage Type | Description |
|------------------------|------------|---|
| Button Press Threshold | DV | <p>The required pressure for a user to apply to a touchpad to report a 'button press'.</p> <p>System-configurable to suit user-preference.</p> <p><i>Default units are grams.</i></p> <p><i>Note: This does not affect any physical-buttons in close proximity to the touchpad (e.g. mouse left/right buttons).</i></p> |

Sample Descriptor .wara:

A simple Touchpad (extract) that supports configuring Button Press Threshold. Actuation force of button press can be configured to be between 20-600 grams (inclusive).

Below document authored with Waratah (<https://github.com/microsoft/hidtools>)

```
[[settings]]
generateCpp = true

[[usagePage]]
id = 0x0D
name = 'Digitizers'

    [[usagePage.usage]]
    id = 0xB0
    name = 'Button Press Threshold'
    types = ['DV']

[[applicationCollection]]
usage = ['Digitizers', 'Touch Pad']

    [[applicationCollection.featureReport]]

        [[applicationCollection.featureReport.variableItem]]
        usage = ['Digitizers', 'Button Press Threshold']
        logicalValueRange = [20, 600]
```

Sample Descriptor:

Below document output from above .wara contents

```
0x05, 0x0D,          // UsagePage(Digitizers[13])
0x09, 0x05,          // UsageId(Touch Pad[5])
0xA1, 0x01,          // Collection(Application)
0x85, 0x01,          //   ReportId(1)
0x09, 0xB0,          //   UsageId(Button Press Threshold [176])
0x15, 0x14,          //   LogicalMinimum(20)
0x26, 0x58, 0x02,    //   LogicalMaximum(600)
0x95, 0x01,          //   ReportCount(1)
0x75, 0x0A,          //   ReportSize(10)
0xB1, 0x02,          //   Feature(Data, Variable, Absolute, NoWrap, Linear,
PreferredState, NoNullPosition, NonVolatile, BitField)
0x75, 0x06,          //   ReportSize(6)
0xB1, 0x03,          //   Feature(Constant, Variable, Absolute, NoWrap, Linear,
PreferredState, NoNullPosition, NonVolatile, BitField)
0xC0,                // EndCollection()
```