

Request #: HUTRR105  
Title: Stylus Haptics  
Spec Release: 1.22  
Requester: Matthew Williams  
Company: Microsoft

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Pages Affected: Haptics (0x0E)  
Values checked: By chair (Matthew Williams)  
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Current Status: Review  
Priority: Normal  
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Required Voter: Wacom  
Required Voter: Intel  
Required Voter: Logitech  
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Voting Begins: 14-October-2021  
Voting Ends: 21-October-2021  
Voting Result:

**Summary:**

Adding new Usages to the Haptics Page to support styli simulation of friction profiles (e.g. ink/pencil/easer) and success/error conditions.

**Proposal:**

Add to Table 17.1: Haptics Page

Usage Id	Usage Name	Usage Type
0x1008	Waveform Hover	SV
0x1009	Waveform Success	SV
0x100A	Waveform Error	SV
0x100B	Waveform Ink Continuous	SV
0x100C	Waveform Pencil Continuous	SV
0x100D	Waveform Marker Continuous	SV
0x100E	Waveform Chisel Marker Continuous	SV
0x100F	Waveform Brush Continuous	SV
0x1010	Waveform Eraser Continuous	SV
0x1011	Waveform Sparkle Continuous	SV
0x1012-0x2000	<i>Reserved</i>	-

Add to 17.1 Simple Haptic Controller

Usage Name	Usage Type	Description
Waveform Hover	SV	Haptic signal when user hovers over an interactive UI element
Waveform Success	SV	Strong haptic signal to alert user an action has succeeded
Waveform Error	SV	Strong haptic signal to alert user an action has failed, or an error has occurred
Waveform Ink Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical ballpoint pen
Waveform Pencil Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical pencil
Waveform Marker Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical marker
Waveform Chisel Marker Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical chisel marker / highlighter
Waveform Brush Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical brush
Waveform Eraser Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical eraser
Waveform Sparkle Continuous	SV	Continuous haptic signal to simulate the feel of inking with a physical sparkle pen

## Sample Descriptor:

A SimpleHapticController that has a waveform list mapping the various ordinals to the new waveform IDs:

```
0x05, 0x0E, // UsagePage(Haptics[14])
0x09, 0x01, // UsageId(Simple Haptic Controller[1])
0xA1, 0x01, // Collection(Application)
0x85, 0x01, // ReportId(1)
0x09, 0x21, // UsageId(Manual Trigger[33])
0x15, 0x00, // LogicalMinimum(0)
0x25, 0x10, // LogicalMaximum(16)
0x95, 0x01, // ReportCount(1)
0x75, 0x05, // ReportSize(5)
0x91, 0x02, // Output(Data, Variable, Absolute)
0x75, 0x03, // ReportSize(3)
0x91, 0x03, // Output(Constant, Variable, Absolute)
0x09, 0x10, // UsageId(Waveform List[16])
0xA1, 0x02, // Collection(Logical)
0x05, 0x0A, // UsagePage(Ordinal[10])
0x19, 0x03, // UsageIdMin(Ordinal 3[3])
0x29, 0x10, // UsageIdMax(Ordinal 16[16])
0x16, 0x03, 0x10, // LogicalMinimum(4,099)
0x26, 0x11, 0x10, // LogicalMaximum(4,113)
0x95, 0x0E, // ReportCount(14)
0x75, 0x0D, // ReportSize(13)
0xB1, 0x02, // Feature(Data, Variable, Absolute)
0xC0, // EndCollection()
0x05, 0x0E, // UsagePage(Haptics[14])
0x09, 0x11, // UsageId(Duration List[17])
0xA1, 0x02, // Collection(Logical)
0x05, 0x0A, // UsagePage(Ordinal[10])
0x19, 0x03, // UsageIdMin(Ordinal 3[3])
0x29, 0x10, // UsageIdMax(Ordinal 16[16])
0x15, 0x01, // LogicalMinimum(1)
0x27, 0xFF, 0xFF, 0x00, 0x00, // LogicalMaximum(65,535)
0x75, 0x10, // ReportSize(16)
0xB1, 0x02, // Feature(Data, Variable, Absolute)
0xC0, // EndCollection()
0x95, 0x01, // ReportCount(1)
0x75, 0x02, // ReportSize(2)
0xB1, 0x03, // Feature(Constant, Variable, Absolute)
0xC0, // EndCollection()
```