

Request #: HUTRR91  
Title: Dockable Devices - Object Type  
Spec Release: 1.12  
Received Date:  
Requester: Pranav Hippargi  
Company: Microsoft

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Pages Affected: Generic Desktop (0x01)  
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: Apple

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Voting Begins: 13<sup>th</sup> March, 2020  
Voting Ends: 27<sup>th</sup> March 2020 (1 week extended voting)  
Voting Result: 5-0-0 Yes-No-Abstain

**Summary:**

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This is a request for an addendum to the previously ratified Dockable Keyboard collection (HUTTR90). This Review Request adds an additional usage for a previously ratified Dockable Device collection called Device Object Type.

**Background:**

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In HUTRR90, we ratified a new HID Collection called Dockable Device. We are requesting an addendum to the usage called Device Object Type. It is possible that there could be multiple Dockable Objects placed relative to the display that also include different objects types such as a HID Device, Display, or NFC devices.

**Proposal:**

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All changes are localized to Chapter 4 Generic Desktop Page (0x01).

New usages to be added to Table 6: Generic Desktop Page

Dockable Device Object Type	DV	An Enum which specifies the type of object which is being docked. This is an optional usage. There are four values in this Enum:  0 – Unspecified	0XD6
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		1 – HID Device 2 – Display 3 – NFC Device	
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## Sample descriptors:

### Device Dock :

The below descriptor describes a Device Dock collection which contains a single Input report which supports reporting the docking state of a Dockable Device with a rectangular-shaped display occlusion region as well as the Device Object Type to specify the type of object which is being docked on the Device Dock.

```

0x05, HID_USAGE_PAGE_GENERIC, // USAGE_PAGE (Generic Desktop)
0x09, HID_USAGE_GENERIC_DEVICE_DOCK, // USAGE (Device Dock)
0xa1, 0x01, // COLLECTION (Application)
0x85, 0x01, // REPORT_ID (1)
0x05, HID_USAGE_PAGE_GENERIC, // USAGE_PAGE (Generic Desktop)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_UNIQUE_ID, // USAGE (Dockable Device Unique ID)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x26, 0xff, 0x00, // LOGICAL_MAXIMUM (255)
0x75, 0x08, // REPORT_SIZE (8)
0x95, 0x08, // REPORT_COUNT (8)
0x81, 0x03, // INPUT (Data,Ary,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_VENDOR_ID, // USAGE (Dockable Device Vendor ID)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x27, 0xff, 0xff, 0x00, 0x00, // LOGICAL_MAXIMUM (65535)
0x75, 0x10, // REPORT_SIZE (16)
0x95, 0x01, // REPORT_COUNT (1)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_OBJECT_TYPE, // USAGE (Dockable Device Object Type)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_USAGEPAGE, // USAGE (Dockable Device Primary Usage Page)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_USAGE, // USAGE (Dockable Device Primary Usage ID)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_DOCKING_STATE, // USAGE (Dockable Device Docking State)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x25, 0x01, // LOGICAL_MAXIMUM (1)
0x75, 0x01, // REPORT_SIZE (1)
0x95, 0x01, // REPORT_COUNT (1)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x95, 0x07, // REPORT_COUNT (7)
0x81, 0x03, // INPUT (Cnst,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_DISPLAY_OCCLUSION, // USAGE (Dockable Device Display Occlusion)
0xa1, 0x00, // COLLECTION (Physical)
0x05, HID_USAGE_PAGE_GENERIC, // USAGE_PAGE (Generic Desktop)
0x09, HID_USAGE_GENERIC_X, // USAGE (X)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x26, 0xff, 0x7f, // LOGICAL_MAXIMUM (32767)
0x35, 0x00, // PHYSICAL_MINIMUM (0)

```

```

0x46, DISPLAY_WIDTH_HM, // PHYSICAL_MAXIMUM (Display Width)
0x55, 0x0d, // UNIT_EXPONENT (-3)
0x65, 0x11, // UNIT (Cm,EngLinear)
0x75, 0x10, // REPORT_SIZE (16)
0x95, 0x01, // REPORT_COUNT (1)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_Y, // USAGE (Y)
0x46, DISPLAY_HEIGHT_HM, // PHYSICAL_MAXIMUM (Display Height)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x05, HID_USAGE_PAGE_DIGITIZER, // USAGE_PAGE (Digitizer)
0x09, HID_USAGE_DIGITIZER_WIDTH, // USAGE (Width)
0x26, 0x00, 0x80, // LOGICAL_MAXIMUM (32768)
0x46, DISPLAY_WIDTH_HM, // PHYSICAL_MAXIMUM (Display Width)
0x81, 0x02, // INPUT (Data,Var,Abs)
0x09, HID_USAGE_DIGITIZER_HEIGHT, // USAGE (Height)
0x46, DISPLAY_HEIGHT_HM, // PHYSICAL_MAXIMUM (Display Height)
0x81, 0x02, // INPUT (Data,Var,Abs)
0xc0, // END_COLLECTION
0xc0 // END_COLLECTION

```

### Dockable Device:

The following descriptor describes a Dockable Device collection which contains a single Feature report containing its Unique ID, Vendor ID, Primary Usage Page, and Primary Usage ID. This can be used by the host to identify the specific Dockable Device that docked.

```

0x05, HID_USAGE_PAGE_GENERIC, // USAGE_PAGE (Generic Desktop)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE, // USAGE (Dockable Device)
0xa1, 0x01, // COLLECTION (Application)
0x85, 0x01, // REPORT_ID (1)
0x05, HID_USAGE_PAGE_GENERIC, // USAGE_PAGE (Generic Desktop)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_UNIQUE_ID, // USAGE (Dockable Device Unique ID)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x26, 0xff, 0x00, // LOGICAL_MAXIMUM (255)
0x75, 0x08, // REPORT_SIZE (8)
0x95, 0x08, // REPORT_COUNT (8)
0xb1, 0x03, // FEATURE (Data,Ary,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_VENDOR_ID, // USAGE (Dockable Device Vendor ID)
0x15, 0x00, // LOGICAL_MINIMUM (0)
0x27, 0xff, 0xff, 0x00, 0x00, // LOGICAL_MAXIMUM (65535)
0x75, 0x10, // REPORT_SIZE (16)
0x95, 0x01, // REPORT_COUNT (1)
0xb1, 0x02, // FEATURE (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_OBJECT_TYPE, // USAGE (Dockable Device Object Type)
0xb1, 0x02, // FEATURE (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_USAGEPAGE, // USAGE (Dockable Device Primary Usage Page)
0xb1, 0x02, // FEATURE (Data,Var,Abs)
0x09, HID_USAGE_GENERIC_DOCKABLE_DEVICE_USAGE, // USAGE (Dockable Device Primary Usage ID)
0xb1, 0x02, // FEATURE (Data,Var,Abs)
0xc0 // END_COLLECTION

```

**Response:**

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