We would like to propose adding usages to the HID spec to better support multi-touch digitizers.

Background:
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Today, it is not uncommon for devices to support reporting multiple simultaneous contacts, and reporting that information via HID is difficult.

Proposal:
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All changes are localized to Chapter 16 Digitizer (0x0D) in the HID Usage Tables document v1.12.

New usages to be added to table 18: Digitizer Page

0x51 Contact identifier      DV   16.6
0x0E Device configuration    CA   16.7
0x52 Device mode             DV   16.7
0x53 Device identifier       DV   16.7
0x54 Contact count           DV   16.6
0x55 Contact count maximum   SV   16.6
0x23 Device settings         CL   16.7

New sections referenced by the above usages:

Section 16.6      Multi-touch digitizer usages

Contact identifier DV - An identifier associated with a contact. The id persists for the duration of that contact's detection, but may be reused for another contact once the original is no longer detected. Detection is assumed to extend from contact down to contact up notifications (or for devices that support hover detection, contact in-range to out-of-range).

Contact count DV - The current number of contacts the digitizer detects and is reporting.

Contact count maximum SV - Used to report the maximum number of concurrent contacts a digitizer is capable of detecting.

Section 16.7      Device configuration usages

Device configuration CA - CA for the top-level collection housing a configuration feature report. A device configuration feature report is used to support changing the digitizer's
behavior dynamically.

Device mode DV - The current input mode configuration for a device. 0 represents reporting as a mouse, 1 represents single input device (e.g. a HID single touch or pen device), and 2 represents multi-input device (e.g. HID touch device supporting contact identifier and contact count maximum). For example, having a mouse collection and specifying mouse mode allows broad down-level device support across hosts.

Device identifier DV/SV - This is a static value (SV) when it is part of a digitizer or mouse top-level collection. It is required when there are multiple digitizer top-level collections of the same kind in a report descriptor. This usage uniquely identifies the digitizer top-level collection and should appear in a feature report. If the device can function as a mouse, the mouse collection should have the same device identifier as the corresponding digitizer collection. Devices with only one digitizer top-level collection do not need to have a device identifier usage.

When the usage is part of a device settings logical collection, it is a dynamic value (DV). It allows the host to select the device it wants to configure. A value of 0 indicates all collections. A non-zero value indicates the top-level collection with matching device identifier.

Device settings CL - The logical collection containing the device configuration usages (Device identifier and device mode).

Notes on Approval Procedure:
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HID WG Online Voting Procedures

1. Votes are on a per company basis.

2. Each Review Request shall have attached a Required Voter List that is the result of recruiting by the HID Chair and submitter of members of the USB IF. Required Voter List must include the HID Chair plus 2 companies (other than the submitter) plus any others designated by the HID Chair at the Chair’s discretion. The Required Voter List ensures that a quorum is available to approve the Request.

3. Impose a 7-calendar-day posting time limit for new Review Requests. HID Chair or designate must post the RR within 7 calendar days. HID Chair or designate must work with the submitter to make sure the request is valid prior to posting. Valid review request must include all fields marked as required in the template. A new template will be adopted that requires at least the following fields: Change Text, Required Voter List, Review Period End Date and Voting End Date, Submittal Date, Submitter, Review Request Title and RR Number.

4. If a RR approval process stalls, the HID Chair may call a face-to-face meeting or conference call to decide the issue. Submitter may request that this take place.

5. Impose a minimum 15-calendar-day review period on a posted RR prior to the voting period. At HID Chair discretion, changes to the RR may require this review period to restart.

6. The Chair will accept votes via documentable means such as mail or e-mail during the 7 calendar days after the close of the review period. If a Required Voter does not vote during the period, then there is no quorum and the Chair may pursue the absent required voter and extend the voting period. The Chair may designate a substitute for the absent voter and extend the voting period if necessary.