

Request #: HUTRR33  
 Title: Addition of usages for water cooling and computer chassis  
 Spec Release: HUT 1.12  
 Received: November 27,2007  
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 CurrentStatus: Review  
 Priority: Normal  
 Submitted: December 14, 2007  
 Voting Starts: January 4, 2008  
 Voting Ends: January 11,2008  
 Required Voter: Nathan C. Sherman [nathans@microsoft.com] (chair)  
 Required Voter: Mark Overby [moverby@nvidia.com]  
 Required Voter: Alex Shows [alex\_shows@dell.com]  
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Summary:  
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We propose the addition of application collections to describe chassis and water cooling devices that are attached to a system using an USB interconnect. In addition, we also propose additional usages for controls that are unique to these device types.

Background:  
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Advances in the enthusiast class personal computer has led to the development of intelligent water cooling devices, chassis, and power supplies that provide addition status, monitoring, and control information to the user on the health and capabilities of their system. In addition to the raw sensor data, the sensors can be grouped into logical thermal and control zones to represent different operating areas within the device (e.g., thermal zones around the processor, hard drives, or PCI-E slots).

Proposal:  
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Add the following usages to the generic desktop page (0x01)

0x0A Water Cooling Device  
 0x0B Computer Chassis Device  
 0xC0 Sensor Zone  
 0xC1 RPM  
 0xC2 Coolant Level  
 0xC3 Coolant Critical Level  
 0xC4 Coolant Pump  
 0xC5 Chassis Enclosure

New text in clause 4.1:

Water Cooling Device CA - A collection of sensors and controls that represents a device using liquid to provide cooling of a thermal environment. A water cooling device contains at least one thermal reporting control.

Computer Chassis Device CA - A collection of usages that represent data about the condition, state, and controls of sensors and devices attached to a chassis containing the motherboard and associated components (e.g., processor, graphics controller, hard drives) of a computing device.

New clause below table 6 (Computer Sensor Controls):

Sensor Zone CL - A logical collection that represents a grouping of sensors or other controls within a device that control a common physical region or physical function within the device when one or more physical regions exist.

RPM DV - Indicates or controls the current revolutions per minute of a rotating device (e.g., fan). This usage shall be represented as units of rotations per minute.

Coolant Level DV - Indicates the current level of coolant in its coolant containment container. This usage shall be represented as a percentage with a

logical minimum of zero and a logical maximum of 100.

Coolant Critical Level SV - Indicates the level at which the coolant is below a critical threshold at which the potential for damage exists.

Coolant Pump US - This collection allows the usages that it contains to be associated with a coolant pump. In this collection one or more RPM usages are found.

Chassis Enclosure CL - This collection represents the dimensions of a computer chassis. This collection shall contain an X, Y, and Z usage.

Add the following usages to the LED page (0x08)

0x4E Indicator Blue  
 0x4F Indicator Orange  
 0x50 Good Status  
 0x51 Warning Status  
 0x52 RGB LED  
 0x53 Red LED Channel  
 0x54 Green LED Channel  
 0x55 Blue LED Channel  
 0x56 LED Intensity

New text in clause 11.6:

Indicator Blue Sel - Indicator color set to Blue  
 Indicator OrangeSel - Indicator color set to Orange  
 Good Status OOC - Indicates that the device is operating within normal parameters  
 Warning Status OOC - Indicates that the device is not operating within normal parameters, but that the situation has not reached the level of an error (see Error)

New clause 11.7 (Multicolor (RGB) LED) -

RGB LED CL - A collection of controls for a color mixing (i.e., RGB) LED. An RGB LED shall contain a red, green, and blue channel usage and may include an intensity usage.

Red LED Channel DV - Control setting the intensity of the red channel of a color-mixed LED.  
 Blue LED Channel DV - Control setting the intensity of the blue channel of a color-mixed LED.  
 Green LED Channel DV - Control setting the intensity of the green channel of a color-mixed LED.  
 LED Intensity DV - Control setting the overall intensity of a color-mixed LED. This control should be represented as a percentage control using a logical minimum of zero and a logical maximum of 100.

Notes on Approval Procedure:

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HID WG On Line 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.