

MEETING 18 MINUTES:

Call to Order UPAMD Power Subgroup meeting – Paul Panepinto 5pm Pacific 16 June 2011

- I. Introductions/Attendance
Bob, Edgar and Paul – Since so few attended, the meeting was informal and unofficial. No motions were required.
- II. Approval of 06/16/2011 Power Subgroup Agenda
- III. Presentation of 06/16/2011 Power Subgroup Meeting 17 Minutes
- IV. IEEE Call for Patents. See
<https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>
- V. Developments in thinking on Power Priority
We converged on definitions for Request Priority, which is analogous to how loudly you yell to get attention – an indication how urgent and important your power request is. This field is in the header message and is relevant to both sources and sinks. Power Priority is the ultimate arbitration done by the Source, when it cannot resolve the available power conflict amongst multiple, connected devices. Power Priority is implemented by the adapter and there is no need to communicate it or the rules the adapter has for determining ultimate priority.

Ultimate priority may be as simple as being associated with the physical port. It may be user selectable via switch or software interface.

Edgar pointed out that UPAMD power hubs will likely keep a table of information that it collects about connected devices. We may develop a message to request that table of information, but as of yet have not seen the need to do that.

Studying what priority means uncovered a big issue for a multi-port hub. A 10-port UPAMD power adapter hub may not want every port to be able to have the full UPAMD capability (10VA – 240VA.) A vendor may make a tradeoff of convenience for cost. This can create an environment where ample power exists in the Source, but it cannot be effectively utilized by the connected devices.

For example, consider 250W 4-port UPAMD power hub with ports labeled A, B, C and D. Assume ports A and B are configured to support up to 240VA and ports C and D are configured to support up to 25VA. If you connect a 180W device into ports C or D, although the power hub has ample available power, it cannot deliver that to the connected load via ports C or D. Some mechanism needs to be defined to alert the user of the fact that suitable available power exists, but it may require plugging the Sink into a different power port.

- VI. Status on Use-Cases – validating correctness and completeness
We did not cover Use-Cases and will return to this in a future meeting.
- VII. Recommend presentation to Working Group on the progress made to be voted upon
1. 1-wire vs. 2-wire for communication (Edgar)
 2. Device connection / disconnection detection scheme (Edgar)
 3. Message definitions (Edgar - Paul)
 4. Message header (Edgar)
 5. Resolution of what request priority means (Paul to summarize)
 1. Request priority – the amount of shouting I do as an indication of how urgent and important this is to me
 2. Power priority – who gets power ahead of the other
 6. UPAMD formal template (voltage, current, low-power disconnect) (Bob to package)
- VIII. New business?
- IX. Adjourn

Power Priority

Last time, we debated whether or not UPAMD should develop a minimum set of rules that constitute a power priority policy to deal with the cases when more power is requested than is available or whenever a source or a sink want to request a power change that is not being met.

Regardless of whether the UPAMD wishes to spec a minimum set of rules, we want to ensure the available messages convey sufficient information for effective power priority policies to be developed.

Topics for today's discussion...

- Do we want to implement a minimum set of priority rules or just think it through well enough to ensure we have sufficient information carried in the messages so that anyone can choose to implement their own power priority policies.
- The Power Priority field in the header normally takes a priority based upon class of device. However, a device may request a higher or lower priority to suit its needs.
- Whenever a device wants to change its stated power need or availability to source power, if the device's request is not being honored, it can request a priority change.
- Ultimately, if priority cannot be resolved via a cooperative set of rules, then, an absolute priority mechanism may be applied. Bob proposed port location in a multi-port hub to be the final resolution mechanism.

FACTORS THAT MAY CONTRIBUTE TO PRIORITY DECISIONS:

We've begun the work by identifying factors that are relevant to priority decisions. So far, the list of factors we've come up with are listed below. Please review this list and provide feedback.

- Sink Class
- Sink Stored Watt Hours
- Source Available Power
- User Input
- Source Type (car, UPS, other classifications)

How might these factors be used to affect priority? Can we start to write down some rules that we want to consider as part of an effective, minimum power priority policy for the UPAMD?