MEETING 12 MINUTES:

Call to Order   UPAMD Power Subgroup meeting – Paul Panepinto                      5pm Pacific 24 March 2011
I.    Introductions/Attendance
Bob Davis, Edgar Brown, Gary Verdun (intermittent phone connection) and Paul Panepinto

II.   Presentation of 03/10/2011 Power Subgroup Meeting 11 Notes
Paul will make the revision noted and resubmit for approval via email to the group.

III.  Approval of 03/24/2011 Power Subgroup Agenda
Motion – Edgar, Bob Seconded.

IV.   IEEE Call for Patents. See
Dave Ringle, head of patent committee for IEEE, hasn’t sent anything to other folks that have expressed intent on having IP related to the work of this working group and that the chair of the UPAMD is responsible for contacting each party that wishes to make a claim and file an LOA. Initial CAN patent may be expired and CAN 2.0 may be coming to expiration in 2012.

V.    Review Corrections to Bob’s Low-energy document
http://grouper.ieee.org/groups/msc/upamd/power/UPAMDLowEnergyConnectDisconnect201103171637clean.pdf
Lee raised in an email objection on price impact and that the requirement for low-energy disconnect may be unnecessary. Bob responded in an email on the origins of this goal and the need to have the group vote on a change if elimination of this requirement is requested. Bob also provided approximate relative costing to have the low-energy-disconnect capability.

Bob will send out the revised low-energy-disconnect doc, because it corrects what may be in error (non-sparking should be replaced with low-energy) in the adopted goals. That needs to be corrected by the UPAMD working group.

VI.   How to Bring Everything Together:
1. Synchronize High-Level / Low-Level State Diagrams, establish correlated naming conventions and state numbers, complete Operational Flow document
   http://grouper.ieee.org/groups/msc/upamd/power/
2. Review UPAMD defined messages related to Power Requirements
3. Agreement with Power Subgroup that Bob put the info into the draft template
   As an operational guide, Bob will concatenate the relevant information into the UPAMD draft. Edgar says there is a need to put together an outline of the requirements. Bob will take the first step in doing this for us.

VII.  Begin discussions on additional topics of importance to this Subgroup:
1. Grounding (example of two pieces of equipment connected across hospital floor with 0.7V difference)
   Lee said HP requires a hard ground on all equipment, because of leakage. Lee later revised that saying it was not a hard ground, but it was isolated with 1megaohm. The issue goes away with this level of isolation.

2. How to measure voltage and current
   This issue was related to where to measure and this was only related to voltage. Edgar says the only concern is when a device requests 40W, for example, does that include all power. Yes.

3. Accurate power availability info when multiple devices connect in series, such as a notebook connected to a docking station to an EPS
Docking station sucks power and delivers to multiple things. If we allow the docking station, it could communicate how much energy it is consuming so that this can be used to calculate the amount of available power to the load that needs power. If the sink wants 100W and the docking station draws 50W for peripherals attached or a battery, the UPAMD power adapter would see up to 150W of power being drawn, more than negotiated with the sink, and that might cause it to flag an error.

When you connect to the docking station, you can ask the docking station how much power it may need and the sink requests the sum of its power need and the docking station power need. This communication can come via UPAMD comms or a separate channel. In all cases, the sink is responsible for specifying the total power need to the UPAMD power adapter. Vampire power?

4. Update on Gary’s high level state diagram (sink and multi-mode diagrams done yet?)
   Gary submitted via email and Bob will put into the document.

5. Inclusion of other relevant standards
   Bob requested info on standards the industry needs. We would like Gary and Lee and others to find out from their colleagues other standards they currently adhere to with their power adapter products. The agency part of the spec would be useful as a template. ESD and other standards adhered to would help us build a better spec.

6. Revisit the early draft of power criteria.

VIII. New business?

1. How do we get other micro vendors to become involved with UPAMD? (NXP, ARM-based (TI, ST Micro), Green Plug, Freescale, Maxim)
2. How to implement PID feedback loop control with analog or digital control?
   Claims are made this is measured in microseconds, pretty quick. PID is a first approximation – there may be more accurate, robust and formal control methods for feedback loop control. We want the vendors to identify why their solutions that can also implement UPAMD communication functionality are best.

IX. Adjourn
   Motion – Edgar.