MEETING 17 MINUTES:

Call to Order   UPAMD Power Subgroup meeting – Paul Panepinto   7am Pacific 02 June 2011

I.   Introductions/Attendance
        Bob, Edgar, Paul

II.   Approval of 06/02/2011 Power Subgroup Agenda
        Edgar – Motion, Bob – Seconded.

III.   Presentation of 05/19/2011 Power Subgroup Meeting 16 Notes
        Bob – Motion, Edgar – Seconded.

IV.   IEEE Call for Patents. See
        https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf

V.   Continue discussing use-cases that cover the full functionality of the UPAMD

        1. Bob's email about nailing down the header info and resolving priority
        2. Talking through the use of Priority to resolve peak power demands
        3. Need for a concluding event for power negotiation?
        4. Must a Source be able to provide more than one voltage or could it be UPAMD-
            compliant with the ability to provide just one voltage (20V +/- x)?
        5. How is stored-watts used in power negotiation?
        6. How to signal the user that power negotiation failed (multiple reasons why?)

        Edgar revised the CAN header message with priority having 3 bits and we discussed the
        impact of so few bits and concluded perhaps between 3 and 8 is best. We discussed priority
        quite a bit and feel the messages and headers have sufficient information, at least as far as
        we can tell at this time, to support a priority policy. We debated if there should be some
        minimum priority policy rules established for UPAMD or should it be up to the vendors.
        Paul expressed concerns that rules can be quite complex, even for simple problems.

        So far, we believe the following factors are relevant to determining priority policies:
        •   Sink Class
        •   Sink Stored Watt Hours
        •   Source Available Power
        •   User Input
        •   Source Type (car, UPS, other classifications)

        We ask for input in defining power priority rules to ensure the messages and headers
        contain sufficient information.

        Edgar suggested both source and sink can keep a minimum amount of information stored in
        RAM, so that information does not have to be shuttled back and forth on every message. If
        either needs to update specific information on either side it should be able to request it (or
        send it) with a message.

We talked about the use of a single CAN transceiver for multi-port power hubs to save money, but that may be a problem for device detection. It may also not be a problem, if we use current sensors for each port independent of communications.

We talked about the need for every device to see every message on the CAN-bus and refined it to mean that every device using a shared CAN-bus transceiver needs to see every message for that CAN-bus. If, for example, you have a 10-port power hub with 2 CAN-bus transceivers, then only the devices on the same CAN-bus transceivers see all messages. Since the header currently defines 3 bits for device number, that means at most 8 devices can be on a single CAN-bus transceiver.

VI.   Review the updates to Edgar's network diagrams for power negotiation
We discussed a revision to Edgar's Network Diagram for a smart sink:

1. Detect device
2. Source brings up communication level power (12V @ 25mA max)
3. Sink takes time to boot up and then sends Power Request Message
4. If there is no response in x seconds, the device is considered to be a dumb sink
5. Source responds with Available Power Message.

VII.   Other use cases

VIII.   Documenting the use-cases and updating the Power Requirements in the IEEE template

IX.   New business?

240W vs. 130W – do we want to expand it? Bring it up in the main committee. Then, vote on it. This will affect the PAR and all documentation. Achieving 240W requires an optional higher voltage and the associated negotiations; this would require either a separate (multi-voltage) class of devices and its associated compatibility issues, or all power adapters to support multiple voltages.

Concluding Comments on Priority Rules:
- How should user input influence power priority?
- How should stored watt hours influence power priority?
- How should device class influence power priority?
- Can we develop a minimum power priority policy?

Should we develop a standard power priority policy or leave it to the vendor?

X.   Adjourn

Motion - Bob