

# **Minutes of the Long Distance 1394 Informal Discussion Group**

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## **Opening**

Colin Whitby-Strevens opened the meeting. Due to the number of attendees, introductions were bypassed. The attendees list is included at the end of these minutes.

The group thanks the 1394 Trade Association and Philips for hosting this informal discussion group.

Colin presented the following agenda, which was accepted without changes.

## **Agenda**

1. Introductions
2. Approval of Agenda
3. Background
4. Review of VESA HN model
5. Brief presentation of work to date from
  - Sony
  - HP
  - NEC
6. Discussion of best way forward
  - Requirements
  - TA v IEEE Study Group v IEEE PAR (IEEE P1394c?)
  - Scope and purpose
  - Administration and logistics

## **Background**

Colin then gave a brief overview. This included the work that has already been done, and what we hope to accomplish. There was some discussion about speed requirements. It was pointed out that the potential speed of the medium may be greater than the speed of the devices connected at the ends. There was consensus that some sort of standardization is necessary.

## **Review of VESA HN model**

Dick Scheel described the VESA Home Network model, including its use of both standard and long distance 1394.

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### **Presentations of work to date**

Taka Fujimori reported the work done by the Sony Tokyo group:

- UTP and POF
- 4B/5B block coding
- scrambled MLT3 line coding for UTP
- unscrambled binary line coding for POF

Alistair Coles reported the work done by the HP Labs Bristol group:

- UTP and POF
- 8B/10B block coding
- unscrambled binary line coding for both POF and UTP

Alistair stated that this 8B/10B block code developed at HP Labs had been published, that he would supply the reference for that publication, and that HP is not pursuing patents covering the particular code as described in that particular publication.

The reference is: "8B10B block code for high speed data transmission over unshielded twisted pair channels", Research Disclosure 38738, July 1996 issue, p431.

Alistair also commented that 100 Mbps is the current cost effective rate for home use, but that higher speeds should be pursued.

Shuntaro Yamazaki reported the work done by the NEC Tokyo group:

- POF
- 4B/5B block coding
- scrambled MLT3 line coding

Shuntaro noted that root contention times will need to be longer, or there will need to be a new root contention process. He offered some forecasts:

- 200 and 400 Mbps speeds should be attainable in the future with POF and HPCF media
- graded index POF and laser diodes used in DVDs (650 nm) should be able to reach gigabit speeds
- eventually graded index POF should cost the same as the current step index POF

### **Discussion of best way forward**

Due to lack of time, the meeting was continued on April 15.

The group decided to request the IEEE P1394b group to:

1. expand its scope to include coding techniques suitable for long-distance data transmission
2. establish a Task Group to address the physical medium concerns for long-distance 1394

Prop: Richard Churchill, Compaq

Sec: John Fuller, Microsoft

Passed: 19 - 1 - 0

The one objection expressed the view that the motion did not provide sufficient emphasis on the need to establish an S100 standard quickly.

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The discussion group proposed the following objectives for the new Task Group:

1. Evaluate and refine the requirements (see below)
2. Consider the use of optical fiber and UTP transmission
3. Consider the long distance transmission at all 1394 cable environments speeds, not just those currently under consideration in P1394b
4. Prioritize the determination of a medium recommendation for new domestic installation (i.e. what type of cable or fiber)

The discussion group proposed the following top-level requirements:

1. 50 m reach (100 m preferred) per hop
  - determine worst case delay
2. UTP-5 and optical fibers
  - minimize the differences between these two media
  - low complexity implementation
3. Facilitate FCC Class B emissions compliance
4. P1394b above the PMD layers
  - same tree-ID algorithm, self-ID algorithm
  - fully interoperable with current 1394 - no bus bridging required
5. Amateur installable
  - installation guidelines, installation test

As chairman of P1394b, Mike Teener accepted the request, on the condition that it must not delay the current work of P1394b. The Task Group may have to spin off as a group on its own if the time scales so require. Mike also commented that the request is entirely consistent with the strong desire already expressed within the P1394b group to prepare specifications suitable for transmission over optical fiber.

It was agreed that the P1394b meetings now need to be two days instead of one, and that the first meeting of the new Task Group would be during the P1394b meeting in Santa Clara on May 5/6. Colin agreed to chair the first meeting.

Colin requested contributions to address the requirements, amplifying, modifying, and prioritizing the list given above (much more detail is required please), which will be the main agenda item for the meeting.

Mike has also agreed that the work of the group should use the P1394b reflector.

To join the reflector for p1394b, send a email message to "listserv@fireflyinc.com" with the one line contents (no signature block, please):

```
subscribe p1394b your-name
```

Substitute the "your-name" string with your real name. The return address of your email is used as the address to put into the reflector database.

When you want to send a message to the reflector, use the address "p1394b@fireflyinc.com".

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### Attendees

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