

# 1394 PWG Meeting

December 13-14, 1999

## 1. Meeting Attendees

The list of attendees included:

Takashi Isoda	Canon
Akihiro Shimura	Canon
Osamu Hirata	Canon Business Machines
Lee Farrell	Canon Information Systems
Peter Johansson	Congruent Software
Kazuo Nomura	Epson
Greg LeClair	Epson
Brian Batchelder	Hewlett Packard
Chuck Rice	Hewlett Packard
Alan Berkema (co-Chair)	Hewlett Packard
Brian Nagy	Kodak
Vincent Finn	Kodak
Jerry Thrasher	Lexmark
Don Wright	Lexmark
Doug Fritz	Microsoft
Mike Fenelon	Microsoft
Ben Chung	Samsung
Fumio Nagasaka	Seiko Epson
Larry Stein	Warp 9 Communications

## 2. Administrivia

Don Wright provided the details for the next PWG meeting:

- February 7-11
- Hotel Monteleone
- 214 Rue Royale
- New Orleans, LA 70130
- ph: (504) 523-3341 or (800) 535-9595
- rate: \$150 single, \$175 double
- reservation cutoff date: January 12, 1999
- meeting registration website: [www.fapo.com/ieec1284/](http://www.fapo.com/ieec1284/)

He also referenced the 2000 schedule for future PWG meetings:

- Apr 3-7        Japan
- May 15-19    New York
- Jul 10-14    San Francisco/Vancouver BC
- Sep 11-15    Chicago
- Oct 23-27    Hawaii
- Dec 11-15    San Diego/Phoenix/Tucson

Don pointed out that there is a schedule conflict with the October meeting and the MFPA IOC Conference.

He announced that the PWG Logo vote and a discussion of the September Brainstorming results will occur at the PWG Plenary on Wednesday.

### **3. Agenda**

Greg LeClair opened the meeting and provided the agenda topics:

- Administrivia
- Introductions
- Agenda Review
- Old Business
  - \* Previous meeting minutes
  - \* SCAT Review
  - \* New Proposals
  - \* PPDT\_r08 Review
  - \* PAR Update
  - \* Schedule
- New Business
  - \* Editorial Review Session
  - \* Error Recovery
- Update SCAT List
- Next Meeting
- Schedule Review
- New Action Items

### **4. Previous Minutes**

Shimura-san commented on the bullet item on page 3 of the October Meeting Minutes:

“Another row should be added for *sbp\_status* = 1 or 2.”

He said that it should be corrected to say:

“Another row should be added for *status* = 1 or 2.”

The group agreed that the Minutes should change accordingly.

ACTION: Lee Farrell will update the October Meeting Minutes to reflect the agreed correction.

Other than the single change above, the October Meeting Minutes were accepted as written.

### **5. PAR Status**

The Project Authorization Request (PAR) has now been submitted to the IEEE NesCom group. The group is expected to provide a response on the PAR by January 30. (The PAR document is available at <ftp://ftp.pwg.org/pub/pwg/p1394/mtg102599/991024PAR.pdf>.)

## **6. SCAT Review**

The following Standards Closing Actions Table (SCAT) was reviewed for any change in current status:

<u>Topic</u>	<u>Importance</u>	<u>Status</u>	<u>Owner</u>
1. Class key – in device ID string	mandatory	agreed	Mike Fenelon
2. Completion status	mandatory	agreed	Peter Johansson
3. Feature directory	mandatory	open	Alan Berkema
4. Initiator configuration ROM	mandatory	agreed	Isoda-san
5. Reverse logout – how?	mandatory	open	Brian Batchelder
6. Reverse logout – when?	mandatory	open	???
7. Service registry	mandatory	agreed	Brian Batchelder
8. Service ID directory – discovery	mandatory	open	Brian Batchelder
9. API	optional	open	Isoda-san
10. MFP ROM example	optional	open	Peter Johansson

1. No change.
2. Changed to “documented.”
3. No change. [This item is dependent on the resolution of other items.]
4. This item was closed, based on the fact that the group agreed at the previous meeting that no documentation was required.
5. No change.
6. Brian volunteered for this item. No change in status.
7. No change. A proposal has been submitted and will be reviewed at today’s meeting.
8. No change. A proposal has been submitted and will be reviewed at today’s meeting.
9. No change.
10. No change.

## **7. Service Registry Proposal**

Brian Batchelder led a review of his proposal for the Service Names Registry. There were no comments except Peter Johansson suggested that a better example should be used.

MOTION: Brian moved that the Service Names Registry proposal should be included into the next revision of the Draft PPDT document.

VOTE: The motion passed without objection.

## **8. Service Directory Proposal**

Brian Batchelder led a review of his and Chuck Rice’s proposal for the Service Directory.

There did not seem to be clear consensus on this proposal. There was some question about where the Service\_ID keys should be placed—depending on whether the service is generic or specific to certain protocols.

One alternative suggestion was to modify the proposal to include Service ID keyword lists.

Another alternative discussed included removing the existing transport controls for retrieving the Service Directory and use a Feature Directory to enumerate Service IDs.

After much discussion, Peter Johansson asked the group whether the PPDT specification should include *any* type of mechanism for advertising Service IDs. Is it really useful to provide this information without building up a sophisticated transport? Or would it be sufficient for a (simple) device merely to attempt to use the service—and fail if it is not supported? Again, there was no clear consensus.

It was noted that the discussion—and the related decision—is difficult because the group has no clear model of the device behavior under consideration.

Because of the lack of progress, the topic was deferred until later.

The next day, the topic was re-visited...

**MOTION:** Peter Johansson moved that the group should leave the draft specification as it is regarding Service Discovery.

**VOTE:** The motion failed—three in favor, seven against.

**MOTION:** Brian Batchelder moved that his proposal should be accepted as written in his e-mail of November 29. This would restrict service discovery mechanisms to Configuration ROM only.

**VOTE:** 6 in favor, 5 against, 4 abstained. This was not considered to be a clear consensus. The topic will be continued on the e-mail reflector.

## **9. PPDT Review**

Peter Johansson led a review of the r08 draft of the PPDT specification.

The group examined each of the latest updates in the draft. Most of the modifications were accepted as written, with the following exceptions and/or additions identified during the review:

- A definition for “Active Queue” should be added.
- Section 4.4, third paragraph, second sentence – changed to “The status block specifies a residual count that indicates how much data was transferred.”
- Section 5.1, fourth paragraph – additional clarification text was added to explain the direction bit meaning.
- Section 5.1, eighth paragraph, last sentence – change “a transport protocol based on SBP-2” to “PPDT”.
- Section 5.2, third paragraph, first sentence – change from “are common to all SBP-2 devices” to “are defined by SBP-2 and are therefore common to all PPDT devices.”
- Section 5.2, sixth paragraph, last sentence – change from “until the initiator successfully retrieves the control information” to “until the target successfully stores the control information in an initiator buffer.”
- Section 5.2 – a clarification should be added to indicate that the status is limited to flow control ORBs, not Management ORBs.

- Section 5.3, *ctrl\_function* table, comment for RELEASE QUEUE – changed to “Once a queue has been shutdown, confirm that resources may be safely released.”
- Section 6.4.2, first paragraph, first two sentences – change to “Although more than one queue may be allocated as the result of a connection request, queues are shut down individually; there is no unified disconnection request that affects all of a connection’s queues.”
- Section 7.3, table – for *resp* of REQUEST COMPLETE and *status* is non-zero, the entry for *residual* should be changed to “Unspecified.”
- Section 7.3, table – for *resp* of REQUEST COMPLETE and *sbp\_status* value of FF<sub>16</sub>, the entry for *status* and *residual* should be changed to “Unspecified.”
- Section 7.3, table – for *sbp\_status* value of 4x<sub>16</sub>, the entry for *residual* should be changed to “Unspecified.”
- Section 7.3 – all changes above in table should have corresponding corrections to the Comment entry.
- Section 7.4 – While reviewing Isoda-san’s Error Recovery document (see below), it was noted that the section should be modified to include a statement that the initiator should discard execution context when it receives a release queue.
- Section 8.6, second paragraph, last sentence – change to: The text string shall include, *at a minimum*, the...”
- Annex B.2 – It was agreed that Peter will attempt a re-write of this section from the perspective of identifying “SBP-2 Pre-requisites.”
- Annex C, *ctrl\_function* table – for SHUTDOWN QUEUE, the Request parameters entry should include the following footnote: “When a bi-directional blocking queue is to be shutdown, both the I2T\_QUEUE and T2I\_QUEUE parameters shall be present and equal.”
- Annex E – need to add an example including a device ID string entry

ACTION: Mike Fenelon will provide Peter with an example of a device ID string entry for inclusion in Annex E.

Peter captured the above changes—and other minor text clarifications—during the review. He will include them in the next revision and distribute the updated document to the group.

Section 4.1 – Isoda-san again raised the suggestion that the diagram in Figures 4 and 5 should make a clear distinction of two types of PPDT (target and initiator.) However, the group was not convinced. Peter repeated his concern that doing so might imply a different API—which would not necessarily be correct, based on the implementation. The group decided to remain with the decision agreed at the previous meeting—no change to the diagram will be made.

## **10. Error Recovery**

Isoda-san led a review of his proposed Informative Annex on explaining Error Recovery. By including an example in the specification, he hopes that it will be helpful for an implementer to understand the intended process. However, because the document was not submitted sufficiently ahead of the meeting, the group did not vote on accepting it for inclusion. Instead, everyone was requested to review the proposed Annex and consider its content for a later vote.

While reviewing the proposal, it was suggested that Figure xyz should be modified to show what causes the task set abort. Also, Isoda-san was requested to include additional diagrams that illustrate the release queue operation and Bus Reset.

While reviewing the document, it was noted that Section 7.4 should be modified to include a statement that the initiator should discard execution context when it receives a release queue. Peter proposed an additional sentence that was approved by the group.

## **11. Residual Calculation**

Shimura-san raised a concern regarding the calculation of the residual by the target. To avoid extra transactions (to read an entire page table), he suggests that it would be better to use the value of actual bytes transferred—rather than the difference between bytes transferred and the buffer size. A few of the attendees were doubtful about any implementation having a page table that is so large (e.g. 64K?) that the target would not have already read the whole page table.

Isoda-san further explained the issue by showing an illustration of the specific scenario under consideration.

Everyone agreed that this concern is only applicable for performance optimization to implementations that do not read the entire page table. Is the benefit significant?

Brian was concerned that changing the definition of the residual value at this point might require significant review before the group could be sure that it would not create a problem or inconsistency elsewhere in the document.

The majority of the group did not seem to feel that the potential optimization benefit was worth the effort of changing—and checking—the specification.

## **12. Reverse Logout**

Brian Batchelder reviewed his proposal document for a new capability called Reverse Logout. This would allow a target to request an initiator to logout from them.

There was much debate about whether or not the initiator should be allowed to (or need to) respond “Cannot logout at this time.” Another major point of discussion was whether or not the operation should merely be “informative,” i.e., a notification to the initiator that a logout is acceptable or desirable to the target. Or should the operation be a command that would *demand* a logout by the initiator? [It was noted that even if the initiator responded that it *will* logout, there is no guarantee that it actually will happen. So the target would still need to handle that situation.]

Brian pointed out that existing mechanisms could be used to achieve a *demand* logout operation. Specifically, this could be achieved by a Bus Reset.

Peter believes the informative aspect of the operation is a good thing. It provides information to the initiator that it otherwise would not have.

After more discussion, Brian volunteered to update the proposal to be used as an advisory or informative operation only. He will also consider whether or not to eliminate any required response from the initiator.

### **13. API Mapping – Abortive Shutdown**

Isoda-san gave a presentation on whether an initiator can distinguish between an abortive and an orderly shutdown on the T2I queue. He is concerned that because there is no difference on the wire, the transport at the initiator cannot report to its clients how the T2I queue was disconnected. To resolve this concern, he proposes that we should define an “abortive” status value for the *status* field in the status block.

He suggests that a flag to indicate “abortive shutdown” should be added to the *status* field in the status block.

MOTION: Brian Batchelder moved to add a new value of “abortive” to the *status* field in the status block to be used to indicate an abortive shutdown of a T2I queue.

VOTE: The motion passed without objection.

### **14. Update SCAT List**

Peter was not convinced that the Initiator Configuration ROM topic was entirely addressed. He suggested that a mechanism should be developed for discovering whether an Initiator supports PPDT.

MOTION: Peter Johansson moved that a mandatory item be added to the SCAT list for defining a mechanism in Configuration ROM to determine whether an Initiator supports PPDT.

VOTE: The motion passed.

As a result of the meeting progress, the SCAT was updated as follows:

<u>Topic</u>	<u>Importance</u>	<u>Status</u>	<u>Owner</u>
1. Class key – in device ID string	mandatory	agreed	Mike Fenelon
2. Completion status	mandatory	documented	Peter Johansson
3. Feature directory	mandatory	open	Alan Berkema
4. Initiator configuration ROM (for Reverse Login discovery)	mandatory	closed	Isoda-san
5. Reverse logout – how?	mandatory	open	Brian Batchelder
6. Reverse logout – when?	mandatory	open	Brian Batchelder
7. Service registry	mandatory	agreed	Brian Batchelder
8. Service ID directory – discovery	mandatory	open	Brian Batchelder
9. API	optional	open	Isoda-san
10. MFP ROM example	optional	reviewed	Peter Johansson
11. Initiator discovery	mandatory	open	Peter Johansson

### **15. Schedule Review**

The updated schedule was identified:

August	Design is complete; decide on proposals; close all Issues [No more proposals after this date!]
September	Functionally complete draft First review

October	Submit PAR to MSC on Oct 11 Second review SCAT started
December	Further review SCAT update Go/No Go for Ballot?
January	[Possible off-cycle meeting?]
February	Specification is done Final edit review Request formation of Ballot Pool to IEEE Submit to "IEEE Balloting Bureaucracy"
May	Balloting begins
June	BRC Meeting

There was a question about whether the request for a Ballot Pool could be done before February. If this is possible, it will be attempted.

## **16. Editorial Review Session**

There was a general discussion considering whether the proposals currently under consideration could be voted on (either by e-mail, conference call, or off-cycle meeting) *before* the February meeting.

After considering the current schedule, it was suggested that an "off-cycle" meeting should be held to make further progress on a "page-by-page" review of other updates to the PPDT specification.

One suggestion was made for holding an off-cycle meeting coordinated with the 1394 TA (January 18-20). This seemed to be the optimal time considering the "two-week" rule. However, more people think they could attend if it were held in San Diego, California on January 24-25.

## **17. Review Action Items**

The group reviewed each of the Action Items from the previous meeting and assigned a closed/still open status to each of them:

1. Greg LeClair will propose a mapping from the API entries to transport operation and the API itself. OPEN
2. Greg LeClair will confirm with O/S implementers if the SBP-2 implementation will differentiate between an Abort Task and an Abort Task Set. OPEN
3. The 1394 PWG members will review the PPDT draft and SBP-2 to identify points of divergence. This review is necessary before the draft goes to ballot. (ONGOING)
4. Alan Berkema – Need to revisit specifying a rich Feature Directory for PPDT devices. MOVED to SCAT
5. Mike Fenelon – Find Plug&Play doc that defines CLASS for 1284 DeviceID. Also revisit decision to hang Device ID off the 0x14 key. MOVED to SCAT
6. Greg LeClair – Update OUI usage document with editorial changes from meeting discussion. Re-post it to the PWG1394 web site for comment and discussion in Durham. OPEN

7. Peter Johansson – Check into why SBP-2 requires writing unsolicited status to all initiators logged into the current Logical Unit. DONE
8. Mike Fenelon will post a proposed text description on CLASS information for inclusion in the Device ID section. OPEN
9. Mike Fenelon will issue a statement to 1394PWG, 1394TA and 1394 standards reflector at IEEE explaining the details of MS host software “always having the data around to resume data transfer for error recovery.” OPEN
10. Alan Berkema will generate and maintain a SCAT list on the website. DONE
11. Brian Batchelder will pass his “Service Names Registry” proposal to IANA and request feedback. DONE

Meeting adjourned.

### **18. Open Action Item Summary**

===== Previous Action Items =====

1. Greg LeClair will propose a mapping from the API entries to transport operation and the API itself.
2. Greg LeClair will confirm with O/S implementers if the SBP-2 implementation will differentiate between an Abort Task and an Abort Task Set.
3. The 1394 PWG members will review the PPDT draft and SBP-2 to identify points of divergence. This review is necessary before the draft goes to ballot. (ONGOING)
4. Greg LeClair – Update OUI usage document with editorial changes from meeting discussion. Re-post it to the PWG1394 web site for comment and discussion in Durham.
5. Mike Fenelon will post a proposed text description on CLASS information for inclusion in the Device ID section.
6. Mike Fenelon will issue a statement to 1394PWG, 1394TA and 1394 standards reflector at IEEE explaining the details of MS host software “always having the data around to resume data transfer for error recovery.”

===== New Action Items =====

7. Lee Farrell will update the October Meeting Minutes to reflect the agreed correction.
8. Mike Fenelon will provide an example of a device ID string entry for inclusion in Annex E.