1394 PWG Meeting

August 16-17, 1999

1. Meeting Attendees

The list of attendees included:

Shigeru Ueda	Canon
Akihiro Shimura	Canon
Osamu Hirata	Canon Business Machines
Lee Farrell	Canon Information Systems
Rob Zirnstein	Canon Information Systems
Peter Johansson	Congruent Software
Mike Moldovan	G3 Nova
Alan Berkema (co-Chair)	Hewlett Packard
Laurie Lasslo	Hewlett Packard
Bonar, Scott	Hewlett Packard
Greg Shue	Hewlett Packard
Jerry Thrasher	Lexmark
Don Wright	Lexmark
Mike Fenelon	Microsoft
Hitoshi Sekine	Ricoh
Fumio Nagasaka	Seiko Epson
Craig Whittle	Sharp

2. Detailed Activity

2.1 Administrivia

Don Wright provided details for the next PWG meeting (Joint PWG/PWG-C):

- September 20-24
- Embassy Suites
- 1881 Curtis Street
- Denver, CO 80202
- Reservations: 1-303 297 8888 (direct line)
- Rate: $139 (ask for Printer Working Group or IBM rate)

He also referenced the 1999 schedule for future PWG meetings:

- Oct 25-29   Raleigh, NC

  > Nov 3-4 W3C AC Boston, MA
  > Nov 8-12 IETF Wash DC
  > Nov 15-19 Comdex

- Dec 13-17   Los Angeles area

Don provided the proposed PWG meeting schedule for 2000 and asked for feedback:

- Jan 24-28   Hawaii
- Mar 6-10   San Antonio, TX

- April 10-14   Osaka or Tokyo
  (or April 3-7?)
- May 22   New York City, NY
- July 10   Portland, OR
- Aug 21   Chicago, IL or Detroit, MI
- Sep 25   Bar Harbor, ME
- Oct 30   San Diego, CA
- Dec 11   Miami, FL

2.2 Agenda

Alan Berkema opened the meeting and provided the agenda topics:

- Agenda Review
- Old Business
    * Previous meeting minutes
    * Review / Update Action Items
    * PAR status
    * Reset connection
    * PPDT review
    * Non-blocking mode
- New Business
    * Login Request proposal
    * Device ID Descriptor
    * Destination ID
    * Service Descriptor Syntax
    * Service Discovery Protocol
- Schedule Review

2.3 Previous Minutes

The July Meeting Minutes were accepted as written.

2.4 PAR status

The IEEE PAR (Project Authorization Request) was not presented at the last MSC meeting. The next MSC meeting is scheduled for October 11, and the group hopes to make sure it will be finalized by then. Don Wright volunteered to present the PAR if Greg LeClair cannot.

Peter Johansson led a review of the PAR text that was generated by Greg LeClair (ftp://ftp.pwg.org/pub/pwg/p1394/mtg070599/par0799.pdf.) Peter suggested that the text from the Scope section in the Peer to Peer Data Transfer Protocol (PPDT) document is more appropriate—and more accurately reflects the group's actual activity.

The group reviewed the Scope and Purpose sections of the PPDT document and agreed on a few minor text modifications.

MOTION: Greg Shue moved that we recommend Greg LeClair to update the PAR document to be consistent with the (updated) Scope and Purpose section of the PPDT document.

VOTE: The motion passed without objection.

2.5 PPDT r04 Review

Peter Johansson led a review of the r04 draft of the Peer to Peer Data Transfer Protocol (PPDT) document, concentrating on the updates resulting from (or at) the previous meeting. The group had no objections to the updates.

2.6 Destination ID

Shimura-san presented his proposal for a Destination Identifier for the CONNECT operation (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/DestId0799.pdf.)

He is concerned that the current method of using the Service_id as the destination identifier has some problems:

- More than one service "entity" that has the same globally registered name cannot co-exist within a local login context at the same time
- The name needs to be globally registered prior to listening—even if the name of the listening service "entity" only needs to be assigned uniquely in the local login context

Peter agreed that a differentiation between "private" and "registered" services might be useful—but not necessary. However, there was general confusion about why Shimura-san felt that there is a need to include a "destination location" to uniquely specify a service id. Mike suggested that the service ids would (should) be intentionally different to reflect their different behavior. Several people felt that the existing specification is sufficient.

It was suggested that Shimura-san should provide a specific example that illustrates how the current specification is insufficient or "broken." He said that the current method would require too many unique names to be registered—but the other individuals did not think that this was a real problem.

In an attempt to clarify the problem, Shimura-san described a situation of a private "service x" implementation being developed, then someone else registers a different "service x" later. At that point, he claimed there would be a conflict of service names.

After long discussion, the group was still not convinced that there is a problem that the current specification does not handle. Shimura-san's proposal was not accepted.

However, Peter will add text to the specification that suggests a company could have its own "private" services by prefixing service ids with that company's name. [It was noted that even this technique is not "foolproof."]

2.7 Service Discovery Protocol

Shimura-san presented his proposal for handling the communication of "service directory" information (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/SrvDir0799.pdf.) The proposed protocol enables the

retrieval of a large list of services that does not fit into a single buffer. The solution uses a separate connection, so it will not interfere with the other control operations over Queue 0.

The group generally agreed that a facility for handling buffer overflow for directory information is a good idea. However, a slight modification was suggested that a well-known service called "Service Directory Indirect" (or something similar) could be defined.

MOTION: Peter moved that the proposal should be accepted in principle—with the modification of an additional service for delivering service directory information.

VOTE: The group voted in favor of adopting the proposal (9 for, 2 against.)

ACTION: Alan Berkema will find out about the process of registering PPDT Services with IANA.

2.8 PPDT r05 Review

Peter Johansson led a review of the updated sections in the r05 draft of the PPDT document (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/PPDT_r05.pdf.) Several minor text changes were identified and will be included in the next revision update.

The entire section 6.4.2 on Queue Shutdown was new for this draft. It was reviewed in detail and generally accepted by the group. A few additional details of the shutdown process were suggested and agreed upon during the review. Peter will include the additions in the next draft.

Peter reminded everyone of the following Action Item that is highlighted in Annex B:

ACTION: 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.

2.9 Reset Connection

Shimura-san presented some slides explaining that Abort Task and Shutdown Queue provide sufficient functionality. He feels it is not necessary to have an explicit Reset Connection operation for resetting a connection.

MOTION: Peter made the motion that an explicit RESET_CONNECTION is not necessary—it should be removed.

VOTE: The motion passed without opposition.

2.10 Review / Update Action Item Status

Alan Berkema presented the list of action items from the previous meeting, and assigned a "done/still open" status for each.

Alan noted that we still have open Action Items that cannot be completed for this draft without further delaying the schedule. He pointed out that the group had agreed that this meeting would be the deadline for

any new proposals to be considered. He suggested that the group should decide whether there are any outstanding items that are critical enough to delay the document submission to balloting.

A few people expressed that they did not think the outstanding topics were critical enough to delay the submission. It was agreed that we should issue the draft without them—instead of delaying. As a result, some of the items that had not been completed were marked CLOSED:

1. Greg LeClair will propose a mapping from the API entries to transport operation and the API itself. OPEN

2. Alan Berkema will write up details on "Please Login to me" (Target initiated communication.) DONE

3. Brian Batchelder will publish a spec-ready version of his Service Discovery proposal. CLOSED

4. Brian Batchelder will write up mechanism for emulated connectionless services over connections. CLOSED

5. Brian Batchelder will investigate service name registration. Do we need to be able to differentiate different registration authorities for service ID strings? CLOSED

6. Alan Berkema will add details to the schedule and publish it. ONGOING

7. Peter Johansson will write up more explicit detail on Target behavior for handling Abort Connection needs. DONE

8. Peter Johansson will add the two explanations for shutting down a queue—Initiator shutting down a T2I queue and Target shutting down an I2T queue. DONE

9. Peter Johansson will add the concept of Disconnect Confirmation to the specification, but will rename it as "Release Queue." DONE

10. Peter Johansson will add the implementation assumption about differentiating between an Abort Task and an Abort Task Set into the profile specification. DONE

11. 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

12. Greg LeClair will post his OUI Usage Proposal for review by the PWG members. OPEN

13. The PWG members shall re-affirm the allocation and use of the PWG OUI numbers—and respond to the OUI Usage Proposal for voting at the August meeting. OPEN

14. Peter Johansson and Greg LeClair will work on integrating the Configuration ROM document into the PPDT document. OPEN

2.11 Login Request Proposal

Alan Berkema led a review of his proposal for a "Login to Me" request (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/msg_rrp2.pdf.)

The proposed mechanism uses the Message_Request / Message_Response registers specified by IEEE P1212r.

The question was raised about what should happen if a target issues a request multiple times—either with repeated non-response or while a login connection already exists. In both cases, it was suggested that nothing more needs to be specified. In the first case, the target should figure out that the Initiator doesn't (or won't) support the request. In the second case, the Initiator can simply ignore the redundant request.

However, there should be some kind of "implementation recommendation" on the minimum time for the target to wait before issuing another request.

Various changes to the proposal were discussed and agreed.

MOTION: Mike Fenelon moved that the proposal—with modifications—should be accepted for inclusion into the PPDT document.

VOTE: The motion passed without objection.

The modifications were captured by Alan and will be provided in an updated version of the proposal posted to the website for final review and acceptance before being incorporated into the PPDT document.

ACTION: Alan Berkema will update his "Login Request" proposal with modifications agreed by the group and submit to reflector for final acceptance before inclusion into the PPDT.

2.12 Service Descriptor Syntax

Shimura-san presented his proposal for a Service ID syntax (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/SrvDesc0799.pdf.)

He explained the two purposes of the Service ID—to convey both the name and the location of the service.

Based on this, Shimura-san proposed that the group should adopt the URI (Uniform Resource Identifier) syntax for the service descriptor. The exact syntax is defined in RFC 2396, and is available at ftp://ftp.isi.edu/in-notes/rfc2396.txt.

Peter and Mike both suggested that the proposal is more complicated than is necessary for 1394 PWG application.

The group agreed that the simple (free-form) string syntax currently defined for the Service ID is sufficient.

2.13 Device ID Descriptor

Shimura-san presented Isoda-san's proposal for a Device ID (ftp://ftp.pwg.org/pub/pwg/p1394/mtg081699/DeviceID.pdf.)

He explained the syntax of the Device ID specified in IEEE 1284 and IEEE P1212r. He noted that the minimal ASCII subset that is defined in P1212r does not cover the Device ID's character set. Also, the null padding of the textual descriptor combined with the quadlet based descriptor_length conflicts with possible NULL code use.

Shimura-san recommended that we should define a uniform descriptor format for the Device ID, and described a proposed syntax.

Peter was concerned that the proposed syntax had a redundant length entry—and as a result, would not be parseable/displayable by some viewers.

Peter noted that there are 12 characters absent from the 1212 specification. He suggested it might be possible to expand the 1212 specification to include these characters.

Another compromise suggested was that the Device IDs used should not include any of the 12 absent characters. This seemed to be a reasonable restriction that would also be a very simple solution to the noted problem.

MOTION: Mike Fenelon moved that we should document the Device ID character set to be consistent with the IEEE 1212 minimal ASCII character subset. Craig Whittle seconded.

Shimura-san raised concern about a printer that can attach to an additional interface. Would the proposed restriction create a problem? Although this is a *possible* problem, the group did not think it was very likely—not likely enough to worry about handling.

VOTE: The motion passed with only one objection.

Shimura-san explained that his objection was based on the concern for the "corner case" situation.

Peter asked about the Microsoft implementation: What is the configuration ROM entry that the Device ID text string will follow? Will it be associated with the Model ID entry (as hinted by the 1212 document) or the LUN entry (as specified by the PPDT document)?

ACTION: Mike Fenelon will find out about the Microsoft implementation for the Device ID text string and will inform the group on the details.

At the end of the second meeting day, Peter proposed and reviewed with the group some new text on a section describing Device ID. The text reflected the conclusions reached on the above discussion points and was generally accepted for inclusion in the next PPDT document draft.

2.14 Non-Blocking Mode

Shimura-san presented some comments and concerns about the discussion on Non-blocking Mode that occurred at the previous meeting.

The group discussed the behavior of both datagram and stream mode communication. In conclusion, it was determined that Shimura-san's concerns of possible blocking were not a (practical) problem. The rest of the group was not convinced that a significant problem actually exists.

Shimura-san said that he would attempt to write up an explanation of his concerns and distribute it before the next meeting.

2.15 Schedule Review

Alan Berkema reviewed the current schedule status. He repeated that the schedule has slipped by one month as of the previous meeting. He noted that the goal of submitting the PAR to the MSC in July did not occur, and the next opportunity is in October.

The new schedule:

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
November	Second review Discuss prototype plans for Interoperability testing Test Plan/Spec
December	Third review Go/No Go for Ballot? Request formation of Ballot Pool to IEEE
January	Specification is done Final edit review Submit to "IEEE Balloting Bureaucracy"
February	Interoperability event

2.16 Review of Open Issues

Are there any Issues that will keep the PPDT document from going to ballot? After some discussion, the group decided that there are no significant issues.

Issues 006 and 014 were closed.

2.17 PWG New Work Items

The PWG will discuss possible new Work Items for the future at the next meeting in September. This brainstorming session will be scheduled for Tuesday night.

In anticipation of that discussion, the 1394 PWG group considered the idea of possible work in the area of multifunction devices. Would there be any benefit for additional extensions to the 1394 PWG efforts?

Meeting adjourned.

3. 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. Alan Berkema will add details to the schedule and publish it. (ONGOING)
3. Greg LeClair will confirm with O/S implementers if the SBP-2 implementation will differentiate between an Abort Task and an Abort Task Set.
4. Greg LeClair will post his OUI Usage Proposal for review by the PWG members.
5. The PWG members shall re-affirm the allocation and use of the PWG OUI numbers—and respond to the OUI Usage Proposal for voting at the August September meeting.

6. Peter Johansson and Greg LeClair will work on integrating the Configuration ROM document into the PPDT document.

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

7. Alan Berkema will find out about the process of registering PPDT Services with IANA.

8. 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.

9. Alan Berkema will update his "Login Request" proposal with modifications agreed by the group and submit to reflector for final acceptance before inclusion into the PPDT.

10. Mike Fenelon will find out about the Microsoft implementation for the Device ID text string and will inform the group on the details.