PSI Meeting
February 8, 2002

1. <u>Meeting Attendees</u>

Shigeru Ueda	Canon
Lee Farrell	Canon Development Americas
Atsushi Uchino	Epson
Alan Berkema	Hewlett Packard
Dave Hall	Hewlett Packard
Bob Taylor	Hewlett Packard
Mark Hamzy	IBM
Harry Lewis	IBM
Don Wright	Lexmark
Kirk Ocke	Xerox
Peter Zehler	Xerox

2. <u>Administrivia</u>

Alan Berkema led the discussion and provided the planned agenda items:

- Motion to make PSI a PWG Project
  * Reflector
  * Charter
  * Phone conference dates
- Review proposal
- Introduce attributes
- Next meeting

3. <u>Motion to Make PSI a PWG Project</u>

No one at the meeting was quite sure of the legal obligations for formulating an appropriate motion that would allow the group to pass the PSI activity to the PWG. However, Alan requested a vote to do so. Each of the six companies present voted in favor of doing whatever is necessary to facilitate passing the PSI Project to the PWG. The motion passed unanimously.

Don Wright noted that one of the conditions of becoming a PWG Project is to establish a Charter for the planned activity. Alan said that we could work on the Charter today, but he would like to defer discussion until after the specification review.

Alan Berkema was approved without objection as Chairman for the [future] PWG group.

Dave Hall was approved without objection as Editor.

No one wanted to accept the role of Secretary.

4. <u>Teleconferences</u>

Because of a schedule conflict with some of the participants, a request was made to change the PSI teleconferences from Thursday 8:00am Pacific Time to Tuesday 8:00am Pacific Time. The group agreed. The next teleconference will be held next week on Tuesday, February 12.

5. <u>Review Proposal</u>

Dave Hall led a review of the latest PSI specification and discussed the latest modifications. He noted that several changes to the interface were made in an attempt to make things less "chatty" over the network.

Although people were happy about the direction of these changes, some individuals felt that the modifications still need to go further.

During the review, Dave explained that JobID and ContentID were defined as different items to facilitate multiple documents within a given job. The separate IDs would be necessary for tracking status of and/or assigning different attributes to the individual documents.

In Section 6.6, it was noted that the out-of-band method "DoJob" might need to be defined by this group. It is not clear that any alternative exists today.

It was agreed that a more detailed object model [behind the interface] should be established. This would help to address things like the association of attributes with objects. For example, should the attribute "Stapled" apply to the Job or the Content?

Should the specification include support for any granularity below the content (document) level? For example, establishing different attributes on a page level—the cover page uses card stock while all other pages use normal paper.

Several issues/questions were raised for consideration:
- How many services do there need to be, and how does the client know which service to utilize to get to a particular printer?
- What about Service and Off-ramp discovery? Currently, the specification does not discuss in detail how this happens. Is the current concept that this is not a dynamic operation?
- Perhaps we should use the UDDI mechanism?
- It would be good if the assumptions of how these things happen were clarified by actual use cases.

It was suggested that several use cases should be added that illustrate client / print service / off-ramp discovery and deployment in various environments. However, this effort should be focused to make sure that the scope doesn't expand too far.

Peter Zehler made additional suggestions for adding other concepts that have already been modeled in IPP. Communication between client and service, meta-information for the job, Job template attributes, Operational attributes, a hierarchy of overrides, etc. Dave Hall made various changes to the JobControl Interface section to reflect some of Pete's comments.

The group agreed that URLs should be opaque to the interface and to the client.

It was suggested that Web Services Inspection Language (WSIL) could be used as an alternative to the QueryInterface method.

An "Off-ramp Identifier" was added to the InputContentTypeSupportQuery method—because a Service might be limited in its capabilities based on the specific off-ramp selected.

In several places in the specification, the phrase "throws an exception" is used. It was suggested that the group needs to define the details of handling exceptions—to return identifiable errors with associated data at the time of invocation. Return status values should be explored.

Instead of using a HTTPS URL to achieve secure retrievals of [document] content, the group felt it would be better to define a "Secure" parameter. This seems more appropriate because the definition of method(s) used by a Service to retrieve content is out of scope for PSI.

For the AddContentPost method, is it possible to use multipart MIME to send binary data? If so, we could avoid the HTTP POST of data. If the binary data is within the SOAP XML, would it need to be Multipart Multiplexed? Should we also investigate "SOAP with Attachments"?

Should the group identify the method(s) that a client can use to call the off-ramp and tell it to pull the data from the print service? (This is the current out-of-band request from the client to the off-ramp.)

The group also raised the suggestion for showing/describing the current Bluetooth print-by-reference model and how it works.

6. <u>Introduce Attributes</u>

Bob Taylor gave a brief talk on XML service attributes.

Some of the key concepts of his proposal:
- Create relatively small "information sets"
- Allow common attribute definition across service types while avoiding out of scope attribute definition
- Allow semantically consistent extension
- Combine multiple information sets in single XML document through namespaces
- Map from IPP semantics for core information sets

PSI relevant information sets:
- Job scheduling
- Job "cardinality"
- Logical page parameters
- Physical sheet parameters
- Print quality parameters

Peter commented that the Job attributes did not need to be separated into such fine granularity. Bob argued that the granularity adopted in IPP is too large—especially if non-printing services are considered. However, it was noted that any repartitioning of the attributes would [probably] create some mapping problems in the future.

The group agreed that the partitioning of attributes—and XML namespaces—needs to be examined further. Such an examination would benefit from the participation of a wider group of [PWG] members that are familiar with IPP implementations.

The group determined that—at the least—the "base set" should be extensible, and should be defined with wide interoperability as a primary goal. This "base set" should also take into account both Bluetooth and UPnP features.

It was suggested that as a starting point, Bluetooth could be used to define required attributes. Any remaining attributes necessary to achieve IPP capability could be optional.

ISSUE: How will we maintain interface versioning / strongly typed interfaces?

7. <u>Use Cases – Off-Ramp Variants</u>

The group also did some brainstorming on a few additional use case scenarios—and their possible variations. Dave plans to include them in the next specification draft.

As part of the consideration of various use cases, the following possible Off-ramps were identified:
- Printer
- PSTN Fax
- Projector
- Another Print Service
- Handheld device
- Storage mechanism (e.g., document management system)
- Order entry system

During the discussion, it was noted that a client needs to be able to:
- Discover printers (off-ramps), given a Print Service
- Discover Print Services that can use a given Printer [later agreed to be out of scope]
- Send information about a specific off-ramp to a specific Print Service—and discover if the Print Service can connect to and use that off-ramp

8. <u>Next Meeting</u>

The next PSI meeting is expected to occur as a PWG Project during the week of April 15 in Boston.

PSI meeting adjourned.