

1 **Meeting Minutes**
2 **PWG MFD Working Group Face-to-Face Meeting**
3 **Radisson Conference Center, Longmont, CO**
4 **June 26-27, 2008**
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7 **On-Site Attendees:**
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Shah Bhatti	Samsung
Ron Bergman	Ricoh
Nancy Chen	Oki Data
Lee Farrell	Canon
Mike Fenelon	Microsoft
Joe Murdock	Sharp Lab
Harry Lewis	InfoPrint Solutions
Glen Petrie	Epson
Jerry Thrasher	Lexmark
Randy Turner	Konica Minolta
Ole Skov	MPI Tech
Bill Wagner	Konica Minolta
David Whitehead	Lexmark
Craig Whittle	Sharp Lab
Peter Zehler	Xerox

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10 **Phone-In Participants:**

Ira McDonald	High North Inc.
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13 **June 26, 2008 Meeting**
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15 **1. Proposed Meeting Agenda**

- 16 • Introduction of attendees
- 17 • Current status and Future Schedule/Milestones
- 18 • Review network Scan Service Semantic Model and Service Interfaces, focusing on WS-Scan
19 alignment, operations, changes
- 20 • Review network Scan Service Semantic Model and Service Interface specification
- 21 • Review of high level Template Service issues

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23 *No adjustment made to the agenda

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25 **2. Minutes Takers Assigned** – Nancy Chen and Shah Bhatti

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27 **3. Current Status and Future Schedule/Milestones**

- 1 • We now have MFD schema that incorporated print service based on IPP, Scan service based on
2 printer MIB. We are currently aligning with WS-Scan model in Conditions (i.e. alert table for
3 printer MIB), ColorSpace and other minor issues. It is possible to extend WS-Scan to PWG
4 Scan Service model. We have reviewed the Scan Service data model in the specification, but not
5 the operation model and operations themselves.
- 6 • Review of MFD Future Schedule/Milestones proposed by Nancy Chen
 - 7 ○ June 27 Meeting:
 - 8 ▪ Review of changes associated with alignment with WS-Scan
 - 9 ▪ Review Scan Service operational interfaces
 - 10 ▪ Discuss PWG-wide prototyping effort to prove interoperability.
 - 11 • At this time we do not see the need to define a protocol binding for the
 - 12 PWG Scan Service unless there is a customer using the service. We will
 - 13 use WS-Scan implementation as fast track to prototyping.
 - 14 ▪ Initial discussion of Template Service
 - 15 ▪ Final PWG member vote on Scan service requirements draft.
 - 16 • We have 6 members already voted via email. The deadline is July 11.
 - 17 ○ August 13-15 Meeting:
 - 18 ▪ Final review of Scan Service specification
 - 19 ▪ Review of Template Service draft
 - 20 ○ October 21-23 Meeting:
 - 21 ▪ Last call of Scan Service model and interface draft
 - 22 ▪ Complete review of Template Service draft
 - 23 ○ December 2-5 Meeting:
 - 24 ▪ Final vote on Scan Service model and interface draft
 - 25 ▪ Last call of Template Service draft and begin Final vote
 - 26 ▪ On question from Ira about prototyping of Template Service:
 - 27 • Per Peter Zehler: Prototyping of Template Service is being done by Xerox
 - 28 currently.
 - 29 • Per Ira: With an email note on this prototyping effort, this Template
 - 30 Service specification can be promoted to formal candidate standard.
 - 31 ○ Next Year:
 - 32 ▪ Probably to begin with Copy service and followed by netFaxIn.

34 4. Review of the PWG MFD Scan Service Model spec

35 (see file: <ftp://ftp.pwg.org/pub/pwg/mfd/wd/wd-mfdscanmodel10-20080609.pdf>)

- 37 • **Quick Overview of the updated PWG Semantic Model**
 - 38 ○ Condition Table is added to the root of the PWG Server to represent the conditions
 - 39 (alerts) of all subunits and services on the device.
 - 40 ▪ ActiveConditions is a sequence of DeviceConditions each identify a component
 - 41 (e.g. an input tray) of the device associated with the alert, has a name (the well-
 - 42 know value for printer state reason, a union of printer state reason, well know
 - 43 value, name space key word), a ConditionId (as the key), severity, time of
 - 44 condition appeared, an extension point.
 - 45 ▪ **Comment: make sure printer state reason extensions are captured.**

- 1 ▪ Issue: Currently there is not a system service to query the conditions at the root of
2 Server.
3 • A possible solution is to add Condition Table in SystemStatus so that
4 condition table will be inherited from SystemState into all ServiceStatus –
5 a MS WS-Scan approach.
6 • Issue: is the service level conditions represent the System view of
7 condition table or service view of conditions?
8 ○ In WS-Scan it is a service-specific view of conditions for all
9 subunits used by the service.
10 ○ Good idea to have at service level element not at root (system).
11 ▪ **Decision: Condition Table at Service level will be service-specific conditions of**
12 **the MFD. ActiveConditions is mandatory, and ConditionHistory is optional. We**
13 **need to define yet another MFD service to provide the system level conditions for**
14 **all services across MFD.**
15 ○ Changed to one single name space for entire model across all services. ##any is used for
16 attribute extension point without non-deterministic error. ##other is used for Vendor
17 Extension.
18
19 • **Review mapping Issue between WS-Scan & PWG Scan Service**
20 • See file: “PWG-WS-Scan-map-issues-20080626.doc” and changes of resolutions below.
21 • Many differences are resolved by simple direct name mapping.
22 • Some differences are resolved by WS-Scan extensions.
23 • ScannerAddressability in PWG Scan Service is the OpticalSolutions in WS-Scan.
24 • PWG uses MediaSizeName to represent Min and Max sizes for Scan Media paths, but
25 currently can not find anything to represent media sizes for film reader. WS-Scan represents
26 the min and max size for ADF, Film, and platen in height and width.
27 - **Ron Burgman will provide what he can find the standard MediaSizeName for file**
28 **reader to Pete.**
29 • PWG uses ScanServiceCapabilities that does not specify intra-element dependencies. That is,
30 it does not tell you which combinations of capabilities are valid. Therefore a
31 “ValidateTicket” operation is provided for Scan Service. WS-Scan represents valid
32 combinations of capabilities in DeviceSettings. There is a direct mapping between the two.
33 • **Magnification in PWG Scan Service will be changed to Scaling to align with WS-Scan, and**
34 **provides height and width that allows asymmetric scaling.**
35 • **ImageToTransfer and InputSize will be added to PWG Scan Service to align with WS-Scan.**
36 **ImageToTransfer is the number of pages to be scanned for the job (disregarding how many**
37 **pages are placed on input tray). ‘0’ will pull all pages until the input tray is empty. This is**
38 **manual way of batch processing (with separating sheet) in PWG Scan Service. WS-Scan has**
39 **one page for an image only. PWG Scan Service allows multiple Scan Regions on a page,**
40 **each is a separate image. By specifying single Scan Region the PWG Scan Service is**
41 **equivalent to WS-Scan.**
42 • WS-Scan allows front side and back side of media to have different scan parameters set up.
43 PWG Scan Service does not support this. Page exceptions for Print Service will be added for
44 this support when there is a request for this feature in the future.
45 • **Pete will complete the update to PWG model document and schema for WS-Scan Alignment**
46 **and post the updates to MFD web site.**

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- **Review Scan Service Operations in specification**

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- CreateScanJob: WS-Scan only allow images scanned to client PC, requiring synchronized events to notify client the scanned data is ready and client to retrieve the scanned images available. Device does not initiate any data transfer. PWG Scan only pushes scanned data from the device to destination and allows any destination URI.

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 - PWG Scan Service has no operations for event.

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 - CloseScanJob: normal scan job operation is CreateScanJob and CloseScanJob is automatically implied after job is created. Device-specific implementation is required for MultipleSetOfOriginal Scan mode operation. **Delete this operation.**

6

 - GetScanJobElements: only allows to get specific groups of elements at the same level as WS-Scan allows.

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 - GetScanDocumentElements: WS-Scan does not have this.

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 - GetScanServiceElement: get Status can get condition table & also counters (only top level groups). Mapping to WS-Scan will be maintained.

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 - ValidateScanTicket: Not only requires to validate whether element, element value are supported for each element, but also whether the intra-element dependencies are valid.

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- **Review of Security Considerations in specification**

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- In IPP the three sisters: URL, security scheme, privacy scheme are used to handle security of operations. PWG Scan Service and WS-Scan do not have these. Instead when binding to web service operations, use WS-Security to provide parameters for mutual or one-way authentication based on the security policy (e.g. only owner or administrator can cancel a job).

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 - The only attributes in Scan Service that is provided for security consideration is the “RequestingUserName” which can be used to identify the user in LDAP or local user database and consequently authenticate and check the access rights for the user. The RequestingUserName must be a fully qualified name and unique within a domain. It’s up to implementation to take care of the associated security attributes of users for specific operations to protect assets mandated by a site-specific security policy.

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 - Section 13.3: Basically this section states that “Restricted use of scan service features” is out of scope of Scan Service specification. It’s up to implementation to implement the restriction mechanism. **Delete all text other than the last sentence.**

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 - Section 13.4: **Remove.** One can stop a non-interruptible job from the device. Unclear why we need this.

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 - Section 13.5: **Remove.** Unclear why we need this in the specification. Service discovery is not part of Scan Service.

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- **Review the Updates in the Scan Service specification**

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- Any text about Template Service has been removed

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 - Scan Job Ticket Life Cycle Diagram is enhanced.

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 - ColorEntry has changed to align with WS-Scan that uses keyword to describe a color encoding, color space, bit depth, and samples per pixel combinations.

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 - **AI-1: Change “Color Encoding” to “Color Type”. Change “Color Space” to “Color Encoding”.**

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- AI-2: Glen Petrie to provide other entries need to be added to the table.
- Added “MediaBox” : for document format that has MediaBox concept such as PDF.
- Added “TemplateInfo” : contain information about the Template used to create scan ticket.
- Got rid of VendorExtension
- Issue of “add the details of the Output Channel elements, since it’s not defined elsewhere.” This should be an issue for InputChannel, not output channel. Will consult Ira.
- Added ScanMediaPathInfo associated with ScanMediaPath.
- Added ScannerAddressabilities
- Issue on “ScannerCounterLife”: Should subunit use the counting metrics used by the services?
 - AI-1: Investigate other maintenance subunits that requires CounterLife. Talk to MFPA group, list maintenance cost items in 3 weeks. Should include sheet count in Scan media path.
- Transformer: was requested to include a subunit for Transformer Service. Will be removed unless somebody can provide definition for this subunit. Will consult Ira for appropriate verbagages.
- AccessMode: definition provide by Ira has been put in.
- Added Conditions : Will remove this element from Root and put in ScanServiceStatus.
- ImagesCompleted: added notes
- Added AutoSkewCorrection
- ScanRegion : replaced “page” with more accurate wordings. Added “This element is mutually exclusive with documentsizeAutoDetect.”
- Magnification: Will be changed to Scaling.
- Added TemplateInfo, TemplateType
- Added DocumentDigitalSignature
- Need to update some of the references for Template Service.

June 27, 2008 Meeting

1. High Level discussion of Template Service

- Template Service is different from other MFD services:
 - Other MFD services get work from job submission; these jobs become work items/tasks queued for the subunits of the service. User can query the status of each job in the work queue. Template Service only stores or retrieve templates to or from a Template Repository. A Template is simply a piece of data to be stored or retrieved, not a job to be processed.
- Templates are stored/retrieved to/from a Template Repository. Template Service only defines the interfaces to store/retrieve a specified template. The implementation of these interfaces to read/write a template to/from a Template Repository is out of scope of Template Service.
- Why providing a service to only retrieve/store templates? Other MFD resources such as fonts also need the same service. The web service protocol used for service interfaces should be the same.
 - Consensus: Change “Template Service” to “Resource Service” to cover all MFD resources.
 - AI : Need global change of “Template” to “Resource”.

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- Types of Resources to be covered by Resource Service should include:

- 3
- Static Resources

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1. Templates

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- (1) Print –

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- a. Print Job Template

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- b. Print Document Template

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- (2) Scan –

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- a. Scan Job Template

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- b. Scan Document Template

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- (3) other service templates to be defined

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2. ICC Profiles

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3. Fonts

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4. Overlays (eg. Forms, background, watermark)

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5. Signatures

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6. Logos

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- Dynamic Resources

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1. Document Data

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2. Driver

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3. Applet

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4. Binary

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- Numeric ID may not be descriptive enough for different types of resource. We would need very descriptive resource type names.

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- **AI : define descriptive resource type naming convention that differentiates local vs. global resources**

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- We would need to consider metadata about resources for their efficient discovery.

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- For efficient retrieval of large size of binary data, MTOM will need to be used for optimized ‘get’ of an opaque blob of any type of data.

- 26
- **Consensus: handle both types of resources in consistent manner.**

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2. Review of Template Service specification (will be renamed as Resource Service specification)

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- Section 1 Introduction:

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- Note that Resource Service may not be resident in MFD.

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- Change the name of the service and working draft in heading.

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- Section 2 Summary:

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- Need major rework to fit for Resource Service.

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- Clarify “validation” operation can validate all resources.

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- Section 3.2 Terminology:

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- Need the definition for Resources: resources for processing of jobs.

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- Need definitions for all types of resources in scope (e.g. ICC profile)

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- **AI: All to send the resources desired to be included in the specification.**

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- Section 3.3 Rationale:

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- Need to generalized to all resources.

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- **Out of Scope are: binary, driver, applet, code.**

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- Section 4 Concept Diagram:
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- “Store” and “Retrieve” to/from Template Repository should be “Write” and “Read” both to and from MFD and Remote PC System.
- Remove Template (now Resource) Repository Service from Template (now Resource) Repository box. Replace Template (now Resource) Repository box with a simple hardware storage medium. It is not an active entity to Resource Service model. It should be treated as a storage only to Resource Service.
- Expiration date should be required for Resources.
- The very template-specific text of life cycle should be removed, and simply states that resource life cycle begins until it’s deleted or expired.
- Section 5 Resource Service Model Overview
 - Should be the same and will add a list of resources.
 - Issue: should resources have processing state? A resource is either existing or non-existent. At the completion of operation the changes to a resource is effected. The processing of resource is very fast. No processing state or associated reason is required.
- Section 6.1 Resource Service Configuration
 - Issue: Should Resource Service have a storage subunit, so do other MFD services (print/scan/fax...)?
 - Per Pete: This is a very good idea. The storage could be memory, USB device, HDD, ..., etc. Printer MIB does not model storage or memory. Host resource MIB might have some sort of storage.
 - Members discussed and concluded MFD resource service should not manage the storage. Administrator can possibly use other management software to manage the storage.
 - **Decision: Tentatively add the storage subunit in PWG semantic model, containing storage type, total size, and size free information until there is a complain.**
 - None of the subunits currently defined in PWG semantic model applies to Resource Service, only storage applies. Figure 3 should be removed and replaced with storage.
- Section 6.2 Resource Service Description
 - Issue: Need an operation to set Service description attributes.
 - Currently there is no administrative operation defined for any PWG MFD service. In the future we probably should define these operations. This might serve well for CIM binding of PWG semantics, in which CIM objects are to be managed by WS-management which is the preferable protocol to handle the setting of administrator settable attributes.
 - The ResourceSupported element contains firmware, font, image, logo, and software that are intended to be the descriptions of MFD resident/installed resources. These are not the physical resources to be managed by Resource Service.
 - **Consensus: These will be renamed a more appropriate term something like DeviceResidentResource or ManagedElement. This will be discussed further in all services across MFD model.**
 - ServiceURISupported: URISupported, privacysupported, authenticationsupported are to be handled by WS-Security.
- Section 6.3 Resource Service Status
 - AccessModes will be updated with Ira provided description.

- IsAcceptingJob: No name change, but the description will clarify that this element indicate whether the service is accepting new resource commands such as get, put, list resources, but can still process get service element, description, status commands.
- NaturalLanguage: This is for system generated strings. NaturalLanguage capability will be added to the service. It is not inherited from PWG ServiceCapabilities.
- QueuedJobCount: No name change. This element is optional and does not apply to Resource Service.
- Section 6.3.3.1 Service State by Operations
 - Will add disable(), enable() operations.
- Section 6.3.4 State Resons
 - Delete OutputAreaAlmostFull and OutputAreaFull
 - Add InternalStorageFull, StorageFull, StorageAlmostFull
- Section 6.4 TemplateList
 - We will not provide an ActiveResourceList. Resources are data, not jobs to be processed.
- Section 6.4.1.1.5 TemplateExpirationTime
 - This will be added to schema
- Section 6.4.1.3 Resource Schema
 - Need to update the model to resources
- Section 7 Theory of Operation
 - Need to be rewritten
- Section 7.1 Resource Service Operations
 - DeleteResourceRequest: use ResourceURI, not ResourceID
 - GetResource: The Resource in response will be MTOM encoding of its binary.
 - PutResource: the ResourceID is generated by the service. The response should return the ResourceURI.
 - SetResourceExpiration: Remove. A user should get the resource, set the ExpirationTime element in resource and put the resource back.
 - ReplaceResource: To ensure the correctness of this operation so that shared reading to the resource will not get half-updated resource data will leave to implementer's responsibility. Remove the description for ensuring consistent view of resource.
 - ValidateResource: Remove.

3. Next Steps

- Update the Scan Service specification according to agreement in this meeting. The template information element as a resource needs to be updated.
- Update the Template Service specification into Resource Service specification.
- Review the Scan Service specification again in the next teleconference.
- Begin MFD WG last call for Scan Service Specification after the next teleconference.
- **Need more members' votes on Scan Service Use Cases and Requirements by July 11.**