



# Cloud Imaging Model Working Group

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Dec 5 , 2012

Samsung , Irvine CA

# Cloud Imaging Model WG Meeting Agenda Dec 5



When	What
10:00 – 10:15	Introduction and Administrative Issues Intellectual Property Policy Statement Identify Minute Taker Introduce Participants Consider Agenda Acceptance of Previous Minutes <a href="ftp://ftp.pwg.org/pub/pwg/cloud/minutes/cloud-concall-minutes-20121029.pdf">ftp://ftp.pwg.org/pub/pwg/cloud/minutes/cloud-concall-minutes-20121029.pdf</a> Action Items Review
10:15 – 10:45	Cloud Printing Requirements and Model Specification Review of Current Draft
10:45 – 11:00	Break
11:00 – 12:00	Joint Session with Semantic Model Working Group • Proposed Cloud Print Manager-Cloud Print Service Operations
12:00 – 1:00	Lunch
1:00 – 2:15	Cloud Printing Requirements and Model Specification • Incorporation of Cloud Print Manager-Cloud Print Service Operations • Next Steps
2:15 – 3:00	Joint Session with Semantic Model Working Group • Mapping Document

# Officers & Editors

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- ❖ Chair: Ron Nevo (Samsung)
- ❖ Vice Chair: Bill Wagner (TIC)
- ❖ Secretary: Michael Sweet (Apple)
- ❖ Document Editor Volunteers:
  - Cloud Imaging Model Working Group Activities
    - Larry Upthegrove: Cloud Printing Requirements and Model
    - Ron Nevo (Samsung): Cloud Printing Requirements and Model
  - Related Semantic Model and IPP Working Group Activities
    - Daniel Manchala (Xerox): Cloud Printing Model Web Services Binding
    - Ron Nevo (Samsung): Job Ticket Mapping – Overall Editor
    - Michael Sweet (Apple): JobTicket Mapping (PPD), Cloud Imaging Model IPP Binding
    - Ira McDonald (High North): Job Ticket Mapping (JDF), Cloud Imaging Model IPP Binding
    - Justin Hutchins (Microsoft): Job Ticket Mapping (MSPS)
    - Paul Tykodi (TCS): Job Ticket Mapping (MSPS)

# Action Items

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## Cloud Imaging Model Action Items

- ❖ Action: Bill to post updated charter (done)
- ❖ Action: Larry to post update of Cloud Print Requirements and Model (ONGOING)

## Related Activities in other Working Groups

- ❖ Action: Ira to update milestones in IPP WG charter in IPP WG (PENDING)
- ❖ Action: Joe to update definition of visible/visibility to cover AAA in IDS WG (PENDING - definition proposed but subject to rework)
- ❖ Action: Paul to work on MSPS information from Justin for mapping document in SM WG.
- ❖ Action: Mike to update PPD Mapping in SM WG (ONGOING - pending table updates)
- ❖ Action: Daniel Manchala to update SM Charter to reflect Mapping and Cloud Print Binding activities in SM WG.

# Status

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## ❖ Charter

- Latest charter was approved by PWG Steering Committee in October (<ftp://ftp.pwg.org/pub/pwg/cloud/charter/ch-cloud-charter-20121030.pdf>)

## ❖ Cloud Printing Model Specification

- Primary current work effort
- Document simplified by decisions that:
  - Print Job Requesters interaction with Cloud Print Server identical to that with standard network Print Server as defined in Semantic Model
  - Detailed design consideration of elements within the Cloud are out of scope

## ❖ Mapping Activity – Transferred to Semantic Model WG.

## ❖ Current Version

- <ftp://ftp.pwg.org/pub/pwg/cloud/wd/wd-cloudmodel10-20121126.pdf>

## ❖ Formatting Conventions

- Capitalization, Page Breaks, etc.

## ❖ Sections 1 & 2 - Intro and Terminology

- Comments? To what extent should terms be defined which are defined later in Section 4? Is it necessary to define in both places?

## ❖ Section 3 – Requirements

- ? Stress that Functional Requirements, which must include Registration, Enumeration, Login, and various security aspects, may be implemented as part of other services in the Cloud environment and are not further defined in the Cloud Printing Model
- The Design Requirements do specify requirements on elements integral to the Model and specific to Printing.

## ❖ Section 4

- Is redefinition of elements in 4.1 necessary?
- Suggest 4.2 be Operational Sequences, discussing sequences using diagrams rather than just diagrams
- Section 4.3, 4.5, 4.6 – Are these sections necessary?
- Section 4.4 – Operations
  - Suggest somewhere clear statement that User-Client and Cloud Print Manager-Printer interactions are out of scope (and that the Cloud Print Manager may very well be embedded in the Printer.
  - Client-Cloud Print Service interactions map directly to SM Client-Print Service interaction (with substantiation)
  - How to deal with Cloud Print Service to Cloud Print Service interactions?
    - Cloud Print Manager – Cloud Print Service interactions
- Operations from Semantic Model

# Cloud Print Manager – Cloud Print Service Operations Proposal -1



- ❖ v1.182 of the semantic model and the links are available from the PWG Semantic Model page <<http://www.pwg.org/mfd>>. The easiest view of the operations is from [http://www.pwg.org/mfd/navigate/PwgSmRev1-182\\_ServiceOperations.html#LinkFF5](http://www.pwg.org/mfd/navigate/PwgSmRev1-182_ServiceOperations.html#LinkFF5). The Cloud Print manager and Cloud Print Service specific operations are shown in their own sequence at the bottom of the diagram of the currently defined Print Service operations.

The new operations are:

- ❖ **GetAvailableJobs:** Returns the list of jobs ready to be fetched for each of the Printers requested. In the simple case the number of Printers will be one. Higher end “Output Managers” can front end a number of Printers. The API also accommodates job scheduling at either the Cloud Print Service or the Cloud Print Manager. When the Cloud Print Service is handling job scheduling the list of jobs returned will always contain a single Job for a Printer. The current definition returns a list of JobUuids. To properly enable Cloud Print Manager job scheduling a job summary element group (i.e., job summary collection in IPP) should be returned. Included in the summary will be the job identifier as well as some minimal set of information useful for scheduling (e.g., Finishings, Media, PrintColorModeType, Sides)
- ❖ **FetchJob, AcknowledgeJob:** This set of operations are similar to the IPP CreatePrintJob operation. The FetchJob response is analogous to the request portion of CreatePrintJob. This is where the operational attributes (e.g., RequestingUserName, JobPassword) are passed as well as the Job’s PrintJobTicket. The ReplyToJob request is analogous to the CreatePrintJob response. This is where the newly created Job’s JobUuid is returned along with any UnsupportedElements. As an optimization some appropriate state information is included.



# Cloud Print Manager – Cloud Print Service Operations Proposal -2



- ❖ **FetchDocument, AcknowledgeDocument:** This set of operations are similar to the IPP SendPrintDocument/SendPrintUri operations. . The FetchDocument response is analogous to the request portion of SendPrintDocument/SendPrintUri. This is where the operational attributes (e.g., RequestingUserName, JobPassword) are passed as well as the Document's content (i.e., data itself or a reference to it). For implementations that support it a DocumentTicket can also be passed. The ReplyToDocument request is analogous to the SendPrintDocument/SendPrintUri response. This is where the newly created Document's DocumentUuid is returned along with any UnsupportedElements if applicable. As an optimization some appropriate state information is included.
- ❖ **UpdatePrinterState, UpdateJobState, UpdateDocumentState:** This set of operations is used by the Cloud Print Manager to inform the Cloud Print Service of its changes in state. Each of the operations sends sparsely populated object of the appropriate type. For example if the configuration of a Printer changes then the UpdatePrinterState request would contain only the relevant portions of the Printer's PrintServiceConfiguration. If media was added, removed or changed in an input tray the InputTrays element group would be returned. Another example is if the Printer completes a Job. The UpdateJobState request would contain the elements in PrintJobStatus that have been changed and a final version of the PrintJobReceipt.
- ❖ Pete looked at separating out operations for config changes vs. status changes but from a wire representation, did not see much difference. From an implementation point of view not only was the dispatch logic simplified but also it allows for combining of multiple operations into a single request. For example a configuration change (e.g., change media in a tray) can affect capabilities.

# Cloud Print Manager – Cloud Print Service Operations Proposal - Comments



- ❖ What about the Cloud Print Service (CPS) contacting the Cloud Print Manager (CPM)?
  - Need out-of-band method to kick CPM
  - What about general element(s) for all operation responses to instruct the CPM to do something (check job status, check for new jobs, provide status updates, etc.)?
  - Can use XMPP for asynchronous, out-of-band events.
  - Do we just use Get-Notifications from CPM to CPS, and that gives us a list of events of interest to the CPM? Get-Notifications can be a long-running operation/connection.
  - CPM needs to create a subscription for each CPS it is connected to.
  - Add RFC 3995 and 3996 operations (Create-Printer-Subscriptions, Renew-Subscriptions, Cancel-Subscriptions, Get-Notifications, etc.) to model?
- ❖ Are subscriptions/notifications part of Cloud port type or separate?
  - Nice to have separate (notifications good outside cloud usage)
  - Nice to bind to cloud (notifications good for cloud)

## ❖ Areas to be Addressed

- Incorporate and Describe Cloud Print Manager – Cloud Print Service Operations in Section 4
- Impact on Operations Sequences Section?
- Sections 5 – 9

## Next Steps

### ❖ Cloud Printing Model and Requirements

- Editor: Larry
- Additional Contributors: ?
- Schedule: PWG Last Call of Cloud Print Requirements and Model – Q2, 2013

### ❖ Cloud Multifunction Model and Requirements

- Editor: ?
- Contributors: ?
- Schedule: ?
  - Initial working draft Q2, 2013
  - PWG Last Call of Cloud MFD Requirements and Model – Q3, 2013

# Cloud Imaging Model WG Participation

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- ❖ We welcome participation from all interested parties
- ❖ Cloud Imaging Working Group Web page
  - <http://www.pwg.org/cloud/index.html>
- ❖ Cloud Imaging Working Group Wiki
  - <http://pwg-wiki.wikispaces.com/Cloud+Imaging>
- ❖ Subscribe to the Cloud mailing list
  - <https://www.pwg.org/mailman/listinfo/cloud>
  - [cloud@pwg.org](mailto:cloud@pwg.org)
- ❖ Cloud Imaging WG holds bi-weekly phone conferences announced on the Cloud mailing list
  - Next conference call is Jan 7, 2013 at 3 pm (EST)
  - Conferences on opposite weeks of IPP WG calls

# Mapping Document V1

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- ❖ CLOUDMAP V1- Mapping of PWG Semantic Model elements into PPD, MSPS and JDF formats
- ❖ Contributors and Schedule as of October F2F
  - Paul doing MSPS, draft by November 12
  - Mike will have PPD mapping updates in late October
  - Ira will have JDF mapping updates in late October
- ❖ Editor
  - Ron will assemble and handle reviews
- ❖ Current Version (?)
  - <ftp://ftp.pwg.org/pub/pwg/cloud/wd/wd-cloudmap10-20120604.pdf>
- ❖ Revised Name, File Name and Location
  
- ❖ New Contributions?

# Mapping Documents



## ❖ Schedule V1:

- Prototype draft by Q1 2013?
- CUPS has done PPD mapping already
- Windows has done MSPS mapping already
- Xerox has done JDF mapping already
- With implementations already done, Prototype draft can go to Stable state as soon as any reported problems with or discrepancies between implemented and documented mappings are resolved.

## CLOUDMAP V2- Mapping of PWG Semantic Model elements into IPDS, MODCA and CIM formats

### ❖ Contributors

- IPDS and MODCA – Paul Tykodi
- CIM – Ira McDonald

### ❖ Editor

- Paul Tykodi

### ❖ Schedule

- Initial Draft per Original Cloud Charter: Q1 2013