

# Charter of the PWG Cloud Imaging Working Group (WG)

Status: PWG Approved

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<ftp://ftp.pwg.org/pub/pwg/cloud/charter/ch-cloud-charter-20120428.pdf>

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## Problem Statement:

Cloud-based applications and solutions are increasingly common, and Cloud-based printing, scanning, and facsimile (collectively called "Cloud Imaging") are emerging in several different forms. Adopting standard protocols and schemas now will help interoperability, speed adoption, and address privacy and security issues involved in Cloud Imaging.

A basic functional model including a Client, Cloud Print Provider, Cloud Print Manager, and Printer was developed in Cloud Printing BOF sessions. This model revealed several new requirements beyond the existing PWG Semantic Model including registration, enumeration/selection, use of late transforms to preserve fidelity, additional notification events, strict privacy and security policies, and reliable logging.

The goal of the Cloud Imaging project is to develop the following new documents to support Cloud-based print and multifunction services using the PWG Semantic Model:

- (a) Mapping Related Standards to/from PWG PJT (CLOUDMAP) (wd-cloudmap10-yyyymmdd) – define a PWG standards-track document that includes a normative mapping of PWG Print Job Ticket and Associated Capabilities [PJT] to and from elements in the Microsoft Print Schema Specification [MSPS], Adobe Postscript Printer Description [PPD], and CIP4 Job Definition Format [JDF];
- (b) Cloud Print Requirements and Model (CLOUDMODEL) (wd-cloudmodel10-yyyymmdd) – define the reference model, terminology, and requirements for Cloud Print services;
- (c) Mapping Related Standards to/from PWG PJT Version 2.0 (CLOUDMAP2) (wd-cloudmap20-yyyymmdd) – define a PWG standards-track document that includes additional normative mappings of PWG Print Job Ticket and Associated Capabilities [PJT] to and from elements in the AFP Intelligent Print Data Stream [IPDS], AFP Mixed Object: Document Content Architecture [MODCA], and DMTF Common Information Model [CIM]; and
- (d) Cloud Multifunction Requirements and Model (CLOUDMFD) (wd-cloudmfd10-yyyymmdd) – define the reference model, terminology, and requirements for Cloud Multifunction services.

## Out-of-scope:

- OOS-1 Defining Cloud federation interfaces and associated protocols and technologies.
- OOS-2 Defining the interface between the Cloud Imaging Manager and Imaging Device, specifically the interface for device status, job status, and job submission.
- OOS-3 Defining new protocols for authentication, authorization, and access control (AAA), enumeration, transport, notification, or device management.
- OOS-4 Defining new document file formats.
- OOS-5 Defining new abstract job tickets.

## Objectives:

- OBJ-1 Develop a PWG standards-track document that defines normative mappings of the elements in the Microsoft Print Schema Specification [MSPS], Adobe Postscript Printer Description [PPD], and CIP4 Job Definition Format [JDF] to and from the PWG Print Job Ticket and Associated Capabilities [PJT] and the equivalent XML Schema elements. Then develop a second version of this document that defines additional normative mappings for AFP Intelligent Printer Data Stream [IPDS], AFP Mixed Object: Document Content Architecture [MODCA], and DMTF Common Information Model [CIM].
- OBJ-2 Develop requirements and model documents for Cloud Print and Cloud Multifunction based on the previous BOF discussions, including registration, enumeration/selection, the concept of late transforms to preserve fidelity, additional notification events, strict privacy and security policies, and logging.
- OBJ-3 Collaborate w/ PWG IPP WG who will develop IPP binding documents for Cloud Print and Cloud Multifunction services.
- OBJ-4 Collaborate w/ PWG Semantic Model WG who will develop SOAP binding documents for Cloud Print and Cloud Multifunction services with associated XML schemas/WSDL definitions and equivalent informative REST bindings.
- OBJ-5 Cloud Print and Cloud Multifunction models should be compatible with existing cloud computing infrastructure.
- OBJ-6 Cloud Print and Cloud Multifunction models should be scalable from consumer-electronics clients to high-end servers.
- OBJ-7 Cloud Print and Cloud Multifunction models should define requirements for usage of document formats and job tickets to ensure imaging fidelity and interoperability.
- OBJ-8 Cloud Print and Cloud Multifunction models should be compatible with generic imaging clients for common operating systems.

## Milestones:

### Charter Stage:

- CH-1 Initial working draft of Cloud Imaging Charter – March 2011 – DONE
- CH-2 Stable working draft of Cloud Imaging Charter – March 2011 - DONE
- CH-3 PWG Approval via Formal Vote of Cloud Imaging Charter – June 2011 – DONE
- CH-4 Update Charter and submit for PWG Steering Committee Approval – January 2012 – DONE
- CH-5 Update Charter and submit for PWG Steering Committee Approval – March 2012 – DONE
- CH-6 Update Charter and submit for PWG Steering Committee Approval – April 2012 – DONE

### Definition Stage:

- CLOUDMAP-1 Initial working draft of Mapping of Related Standards to/from PWG PJT (CLOUDMAP) – Q4 2011 – DONE
- CLOUDMAP-2 PWG Last Call of Mapping of Related Standards to/from PWG PJT(CLOUDMAP) – Q3 2012
- CLOUDMODEL-1 Initial working draft of Cloud Print Requirements and Model (CLOUDMODEL)– Q2 2012 – DONE

- CLOUDMODEL-2 PWG Last Call of Cloud Print Requirements and Model (CLOUDMODEL) – Q4 2012
- CLOUDMAP2-1 Initial working draft of Mapping of Related Standards to/from PWG PJT Version 2.0 (CLOUDMAP2) – Q1 2013
- CLOUDMFD-1 Initial working draft of Cloud Multifunction Requirements and Model (CLOUDMFD) – Q1 2013
- CLOUDMAP2-2 PWG Last Call of Mapping of Related Standards to/from PWG PJT Version 2.0 (CLOUDMAP2) – Q3 2013
- CLOUDMFD-2 PWG Last Call of Cloud Multifunction Requirements and Model (CLOUDMFD) – Q3 2013

### Implementation Stage:

- INTEROP-1 IPP WG interoperability testing of IPP Cloud Print implementations – Q2 2013
- INTEROP-2 SM WG interoperability testing of SOAP Cloud Print implementations – Q2 2013
- INTEROP-3 IPP WG interoperability testing of IPP Cloud Multifunction implementations – Q1 2014
- INTEROP-4 SM WG interoperability testing of SOAP Cloud Multifunction implementations – Q1 2014

### References:

[AFP] Advanced Function Presentation Consortium,  
<http://www.afpcinc.org/>

[CIM] DMTF, "Common Information Model",  
<http://www.dmtf.org/standards/cim>

[CUPSPPD] M. Sweet, "CUPS PPD Extensions",  
<http://www.cups.org/spec-ppd.html>

[DMTF] Distributed Management Task Force,  
<http://www.dmtf.org/>

[JDF] CIP4, "JDF Specification Release 1.4a", December 2009,  
[http://www.cip4.org/menu.php?name=technical\\_resources](http://www.cip4.org/menu.php?name=technical_resources)

[IPDS] AFP, "Intelligent Printer Data Stream Reference", August 2011,  
<http://www.afpcinc.org/IPDS-Reference-09.pdf>

[MODCA] AFP, "Mixed Object: Document Content Architecture", July 2011  
<http://www.afpcinc.org/>

[MSPS] Microsoft, "Microsoft Print Schema Specification Version 1.0", May 2007,  
<http://msdn.microsoft.com/en-us/windows/hardware/gg463385>

[PJT] P. Zehler, PWG Semantic Model Print Job Ticket and Associated Capabilities, work-in-progress,  
<ftp://ftp.pwg.org/pub/pwg/mfd/wd/>

[PPD] Composed of [TN5003], [TN5645], and [CUPSPPD].

[TN5003] Adobe Systems Incorporated, "PostScript Printer Description File Format Specification Version 4.3", Technical Note #5003, February 1996.  
[http://partners.adobe.com/public/developer/en/ps/5003.PPD\\_Spec\\_v4.3.pdf](http://partners.adobe.com/public/developer/en/ps/5003.PPD_Spec_v4.3.pdf)

[TN5645] Adobe Systems Incorporated, "Update to PPD Specification Version 4.3", Technical Note #5645, April 1997,  
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