The Printer Working Group

Semantic Model Workgroup

April 27, 2016

Boise,Idaho

Daniel Manchala (Xerox)

SM Meeting Agenda

When	What
9:00-9:15	Administrivia, Introduction and Status.
9:15-9:45	Mapping CIP4 JDF to PWG Print Job Ticket v1.0 (JDFMAP)
9:45-10:45	SM 2 Issues
10:45-11:00	Break
11:00-11:45	SM 3 Issues
11:45-12:00	Next Steps.

Administrivia

- Welcome
- Confirm Minutes Taker
- Policy on Non-disclosure of Proprietary Information
- Semantic Model Workgroup Officers
  - Chair: Daniel Manchala (Xerox)
  - Vice-Chair: Paul Tykodi (TCS)
  - Secretary: Bill Wagner (TIC)
  - Document Editors:
    - Daniel Manchala (Xerox) – SM3 Schema
    - Ira McDonald (High North) – JDFMAP (awaiting prototype)
    - Rick Yardumian (Canon) – JDFMAP (awaiting prototype)
- Acceptance of Previous Meetings Minutes
  - **ftp://ftp.pwg.org/pub/pwg/sm3/minutes/SMWG-sm3-Minutes-20160418.pdf**

Introduction

- The current Semantic Model workgroup is the latest in a series of PWG workgroups documenting and maintaining the Hard Copy Imaging System model.

- This model defines the semantic elements that constitute the imaging services and subunits of a network connected Imaging System, and the actions that operate on the objects and elements of the model, independent of a specific protocol or network environment.

- By the current workgroup charter, the primary function of the workgroup is to keep the model updated with additions and changes developed by other PWG workgroups, to make the model documentation accessible without the need for special software, and to provided for the review and approval of model updates by the PWG membership.

Project Status

From recent discussions, there are three active projects in this workgroup

- Mapping CIP4 JDF to PWG Print Job Ticket v1.0 (JDFMAP)
  - Current draft (ftp://ftp.pwg.org/pub/pwg/sm3/wd/wd-smjdfmap10-20150604.pdf) is at Prototype level, awaiting prototype reports.
  - Set of samples for prototype have been received from Rainer Prosi.
- Update and Finalization of Semantic Model 2
  - Produce an updated version of SM2, reflecting corrections and reasonable additions from IPP, but no Cloud or 3D aspects
  - Finalize and document this version and subject it to an approval process
- Creation of Semantic Model 3
  - Start afresh with SM3, intended to reflect updated view of MFD, with addition of Cloud aspects and 3D Print and Scan Services

Mapping CIP4 JDF to PWG Print Job Ticket v1.0 (JDFMAP)

- Description: define a normative mapping from XML objects and attributes in the CIP4 Job Definition Format [CIP4JDF] to XML elements in the PWG Print Job Ticket and Associated Capabilities [PWG5108.7]

- Documents: Prototype draft of JDFMAP is posted at:

  ftp://ftp.pwg.org/pub/pwg/sm3/wd/wd-smjdfmap10-20150604.pdf.

  Sample JDF job tickets from Rainer Prosi are posted at
  ftp://ftp.pwg.org/pub/pwg/sm3/examples/

- Actions:
  - Prototype is to be done by converting sample JDF job tickets to PWG (IPP) Job ticket, and verifying result.
  - The workgroup needs to develop a procedure for this.
  - Select PWG members will be approached and asked to prototype the mapping of these limited examples.

- Status:

Plan for Updating and Finalizing SM2

- There have been updates to the Schema since the MFD Named version PWG Semantic Model Schema v1.127 and the last named version v1.176 (PWG-SM2-053112). These have include:
  - Format corrections
  - Additions from IDS and IPP
  - New Features (e.g., Cloud)
- These updates are to be reviewed and a modified Schema created to:
  - Retain corrections
  - Retain suitable IDS and IPP additions
  - Remove Cloud aspects
  - Add elements/attributes generated by IPP Workgroup and approved by the PWG that would constitute a reasonable complete PWG MFD model
- This updated SM2 Model, including the System, Operations, and Objects, would then be submitted for PWG approval

- It appears that updates of the Semantic Model to reflect IPP changes were last made in December 2012. Several new specs have been issued since then, and new attributes have been registered. The following specifications may include items that should be reflected in a 'final' SM2 model.
  - cs-ippfinishings20-20141219-5100.1.pdf
  - cs-ippscan10-20140918-5100.17.pdf
  - cs-sm20-system10-20120217-5108.06.pdf
  - cs-ippfaxout10-20140618-5100.15.pdf
  - cs-ipptrans10-20131108-5100.16.pdf
  - cs-sm20-pjt10-20120801-5108.07.pdf
  - cs-pwgmsn20-20130328-5101.1.pdf
  - cs-ippeve10-20130128-5100.14.pdf
- How do we determine what additions should be included in the model?
- Should approval be by the full new process, or just a call for objections?

- SM2 is envisioned as a complete and firm model of the PWG MFD System, reflecting the characteristics of existing products.

- SM3 contains new features that may not yet be widely implemented. SM3 will be a work-in-progress for some substantial time.

- Should periodic update of SM2 continue, with updated subjected to PWG approval, so it will continue to be a valid current model?

Break

SM3 Issues

- SM3 is to include:
  - Cloud Imaging features, including additional aspects from IPP Infra,
  - 3D Printing from IPP efforts
- Should Backward Compatibility with SM2 be an objective?
- Should "Light" Services (FaxIn, EmailIn, EmailOut) be reclassified or just treated as Services lacking certain elements?
- Should the System Control Service (with its limited capability) be restructured as a System Service, including Resource Service functions, as in IPP, as well as other expanded capabilities?
- Should the Semantic Model Workgroup model a 3D Scan service, possibly ahead of IPP, to better provide a complete model with elements and operations being parallel and compatible among services?

Other Issues and Next Steps

- Continuing the Semantic Model effort requires the participation of more PWG members, both for active generation of material and for review. Participation is dependent on:
  - An understanding on the part of both the participant and the supporting company of the value of the semantic model.
  - Presentation of the Semantic Model documentation in a form that is easily understandable, so that participation does not require either special knowledge or software.

- The Semantic Model Workgroup has been posting "browesable" forms of the model and the operations. We need to know if other PWG members find these forms of the documentation usable and sufficient to consider the content.

Other Issues and Next Steps

- The SM Workgroup believes that there is significant value in maintaining the Semantic Model parallel to but independent of IPP.
  - The SM effort concentrates of the basic features necessary in communicating with imaging services, independent of the protocols used in that communication. The operations and elements remain valid, even though the lower level communication levels may change.
  - The model view of an imaging system allows the inherent parallelism between different services to be developed and exploited.
  - The abstract model provides a more comprehensible view of the generalized Imaging System which, with the tools available, allows zooming between a high level overview and very specific detailed elements at the lowest level. This makes communicating the PWG concept of imaging , at all levels, much easier and allows better a interface with other standards organizations dealing with related matters.

More Info/How to participate

➢ **We welcome more participation from member companies**

➢ **Much of the discussion of issues will be on the SM3 mail list. You must subscribe to the list to be able to post to the list. See http://www.pwg.org/mailman/listinfo/sm3 to subscribe.**

➢ **The group maintains a Web Page for Semantic Model that includes links to the latest documents, schema and a browse-able version of the schema at http://www.pwg.org/sm3**

➢ **Next conference call: May 16, 2016; 12:00 – 1:00 Pacific Time / 3:00 – 4:00 PM Eastern Time.**

Call-in toll-free number (US/Canada): 1-866-469-3239

Call-in toll number (US/Canada): 1-650-429-3300

Call-in toll number (US/Canada): 1-408-856-9570

https://ieee-isto.webex.com/ieee-isto/e.php?MTID=m123b376f8d9bdc7d9ff0ff43ed7d1610

Appendix

Past Specifications

Approved Documents

Print Service: *Approved January 2004*

- PWG5105.1:
  PWG Semantic Model Specification Version 1.00
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm10-20040120-5105.1.pdf

Scan Service: *Approved April 2009*

- PWG5108.02-2009:
  Network Scan Service Semantic Model and Service Interface Version 1.0
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-scan10-20090410-5108.02.pdf

Resource Service: *Approved July 2009*

- PWG5108.03-2009:
  Network Resource Service Semantic Model and Service Interface Version 1.0
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-resource10-20090703-5108.03.pdf

Approved Documents

MFD Common Semantics: *Approved April 2011*

- PWG5108.01-2011:
  MFD Model and Common Semantics Version 1.00
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-mfdmodel10-20110415-5108.1.pdf

Copy Service: *Approved June 2011*

- PWG5108.04-2011:
  Copy Service Semantic Model and Service Interface Version 1.00
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-copy10-20110610-5108.04.pdf

MFD Requirements: *Approved September 2010*

- Multifunction Device Service Model Requirements
- ftp://ftp.pwg.org/pub/pwg/informational/req-mfdreq10-20100901.pdf

Approved Documents

FaxOut Service : *Approved August 2011*

- PWG 5108.05-2011:
  FaxOut Service Semantic Model and Service Interface Version 1.0
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-faxout10-20110809-5108.05.pdf

System Control Service: *Approved February 2012*

- PWG 5108.06-2011:
  System Object and System Control Service Semantics Version 1.0
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-system10-20120217-5108.06.pdf

Print Job Ticket: *Approved August 2012*

- PWG 5108.07-2012:
  PWG Print Job Ticket and Associated Capabilities Version 1.0
- ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-pjt10-20120813-5108.07.pdf