

Semantic Model Workgroup Meeting Minutes

April 27, 2016

The Semantic Model Workgroup Face-to-Face Meeting was called to order in Boise, ID at about 9:15 MDT on April 27, 2016 and ended about 12:00 MDT.

1) Administrivia and Introduction

(a) Slides: <ftp://ftp.pwg.org/pub/pwg/sm3/slides/Semantic-Model-April-2016-meeting.pdf>

(b) Daniel Manchala (chair) officiated.

(c) Minutes Taker: Bill Wagner

(d) Attendees

- 1) Aveek Basu (Lexmark)
- 2) Till Kamppeter (Canonical/OpenPrinting)
- 3) Smith Kennedy (HP)
- 4) Jeremy Leber (Lexmark)
- 5) Ira McDonald (High North)
- 6) Matthew Morikawa (Kyocera Document Solutions)
- 7) Daniel Manchala (Xerox, SM Chair)
- 8) Brian Norris (Google)
- 9) Michael Sweet (Apple)
- 10) Paul Tykodi (TCS, SM Vice-Chair)
- 11) Bill Wagner (TIC, SM WG Secretary)
- 12) Craig Whittle (Sharp)
- 13) Rick Yardumian (Canon)

(e) Acceptance of Minutes

The minutes of the previous SM3 conference call (<ftp://ftp.pwg.org/pub/pwg/sm3/minutes/SMWG-concall-minutes-20160418.pdf>) were accepted

(f) Action Items

- a. Paul to contact PWG members to prototype JDFMAP. (IN PROCESS)
- b. Approach necessary to make named version of schema reflecting fully corrected SM2, and get approval determined. (Daniel - IN PROCESS)
- c. Semantic Model Schema Directory added to PWG GitHub directory DONE (Smith)
- d. Members to consider the uses of and need to maintain the Semantic Model. DONE

2) Project Status (see F2F slides referenced above)

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

(i) The latest draft is posted at <ftp://ftp.pwg.org/pub/pwg/sm3/wd/wd-smjdfmap10-20150604.pdf>

(ii) This draft is at 'prototype' level, and has been awaiting prototype results.

(b) Update and Finalization - Semantic Model 2 (SM 2)

(c) Generations of Semantic Model 3 (SM 3)

3) Discussion of JDFMAP Prototype

- (a) Prototype effort and report necessary to allow specification to advance to "stable" level, and to enter Last Call and Voting.
 - (i) Prototype does not need to cover the entire specification, but should cover at least areas representative of specification contents
 - (ii) Group doing prototype effort does not need to be publicly identified
 - (iii) Prototype results do not need to be published, but errors or unclarity encountered in the specification should be identified
- (b) These considerations with regard to the extent of prototyping specifically apply to the JDFMAP specification as follows.
 - (i) CIP4 posted samples of JDF Job Tickets illustrating specific JDF features at <https://confluence.cip4.org/display/PUB/JDF+Samples>
 - (ii) Michael Sweet had observed that he did not think that "...the goal should be a prototype of every possible mapping - all we need to do is show that the mapping described in the JDFMAP document is feasible/reasonable to implement. ". He suggested that examples showing the following three types of jobs would be adequate:
 1. Simplex A4 job (dead simple job)
 2. Duplex US Letter job on Glossy media with multiple copies, staple, and letter fold (covers media type, duplex, copies, and common finishing operations for billing/marketing)
 3. Duplex A3 job with multiple copies, saddle stitch, booklet fold/imposition, and cover (more complex mapping for reports/small publications)
 - (iii) Rainer Prosi (Cip4) provided and Ira posted examples from CIP4 for these three types of jobs at <http://ftp.pwg.org/pub/pwg/sm3/examples/>:
 - [JDF_IPP_Booklet.jdf](#)
 - [JDF_IPP_GlossLetter.jdf](#)
 - [JDF_IPP_Simple.jdf](#)
- (c) Method of Prototyping
 - (i) Since this is a Semantic Model specification, prototype does not require actual generation and comparison of JDF and SM generated hardcopy. Rather merely an analysis indicating that reasonable equivalent product would be produces is sufficient.
 - (ii) However, it is required that the conversion from JDF to SM job ticket be done by a program or script designed to convert JDF to SM semantics according to the specification, and that the conversion of the examples not rely upon human intervention. If, on evaluation, the remapping requires significant 'tweaking' to be valid, this should be reported in the prototype report unless it is attributable to a clear error in generating the remapping code.

(d) Prototype Procedure

- (i) Paul indicated that prospective prototypers asked for a clear statement of what constitutes an adequate prototype activity for this specification
- (ii) Bill Wagner agreed to generate a Prototype requirements document based on the meeting discussions.
- (iii) It was further observed that prospective prototypers probably already have code to do some degree of remapping, and that it is in their self-interests to implement the results of the combined CIP4/PWG remapping specification effort and to identify problem areas that are observed.
- (iv) Finally, although the conversion of the three examples posted at <http://ftp.pwg.org/pub/pwg/sm3/examples/> must be prototyped, the agency doing the prototype is encouraged to also prototype the conversion of whatever examples posted at <https://confluence.cip4.org/display/PUB/JDF+Samples>. or indeed any other examples it wishes to do and report on any problem found in the specification

4) Update and Finalization - Semantic Model 2 (SM 2)

- (a) It was agreed that the update to SM2 would:
 - (i) Start with SM V2.905, (a browseable version at <http://www.pwg.org/sm/schemas/Rev2.905/system.html>).
 - (ii) Add elements developed in the IPP WG since 2012, and check that earlier elements are already included in the Model, if appropriate.
 - (iii) Not include Cloud specific elements in SM2. Therefore, with respect to IPP Infra elements (PWG5100.18), only document-access operation attributes appear appropriate to SM2
 - (iv) Retain deprecated IPP elements, but marked as Deprecated (schema already has a way of handling deprecated elements.) Possible effects of deprecation on other elements should be checked. **However, remove from SM3**
 - (v) Revert to a 1.186 version number, with the final version being 2.0.
 - (vi) Be approved via a "Call for Objections" process
 - (vii) Be maintained with additional IPP-generated well-known values defined for previously identified attributes, but not include new attributes. This same criteria would be followed in the update with respect to the current Finishing 2.1 effort, with new media and orientation not being included.
 - (viii) Retain backward compatibility to the MFD Model. EmailIn, EmailOut, FaxIn and Resource Services all retained at their original level.
- (b) Use of IANA IPP Registry Elements to Synchronize SM2 with IPP

- (i) As a starting point for considering updates, IANA IPP registry elements were extracted onto an Excel sheet ([IANA registry.xlsx](ftp://ftp.pwg.org/pub/pwg/sm3/white/) file in <ftp://ftp.pwg.org/pub/pwg/sm3/white/>). This file contains the contents of the IANA IPP registry (<http://www.iana.org/assignments/ipp-registrations/ipp-registrations.xhtml>), ordered by reference and color coded to identify elements added after the before the last Semantic Model/IPP update in December 2012, it being assumed that they have been addressed. Elements related to IPP Infra are also shaded (in orange). The Excel file has five sheets, corresponding to IPP Attributes, Keyword Attribute Values, Enum Attribute Values, Operations, and Status Codes. Several IPP Registry elements were investigated to try out the approach.
 - (ii) Correlation of IANA IPP Attributes to Schema Elements needed to consider the difference both in naming and grouping between IPP and the model. There are some non-obvious mappings; for example, some IPP Printer Description attributes map to SM Job Capabilities elements.
 - (iii) Mapping of Keyword Attribute Values, Enum Attribute Values, Operations, and Status Codes, although there are differences in the naming conventions, appear relatively straightforward.
- (c) Other Approaches to Correlation and Update
- (i) The contention that elements in references approved before December 2012 would probably be in the 2.905 Semantic Model schema was later shown to be invalid since the IPP references retain their original number even when they are later revised. Although the proposed method could be used as an alternate check for elements to be added, other approaches should be developed.
 - (ii) Liquid XML may provide a feature whereby all elements in the Model are listed. Such a list would provide a good way of checking elements against IPP attributes, and easier than browsing the Model, although the browsing may still be necessary to get context.
 - (iii) The PWG Print Job Ticket and Associated Capabilities Candidate Standard (5108.07-2012) contains lists of certain Semantic Model elements in the appendices, including PrintJobTicket Elements, PrintServiceCapabilities, Keyword Well-Known Values, Keyword Value extension patterns, and PrintServiceJobCapabilities. These lists can be used as a good (although not necessarily complete) reference as to what already exists in the Semantic Model.
 - (iv) The PWG Print Job Ticket and Associated Capabilities Candidate Standard includes information IPP/Semantic Model mapping in Appendix H. This information can be used to convert the attribute names in the IPP registry to likely Semantic Element names, assisting in correlation with the Semantic Model element lists developed.

5) Semantic Model 3

- (a) SM3 starts with the SM2 model but would not necessarily maintain backward comparability to SM2, although gratuitous incompatibilities would be avoided. Specific examples of areas of incompatibility are:
 - (i) "Light Services" (EmailIn, EmailOut, FaxIn) would be reclassified as Light services.
 - (ii) The System Control Service would be expanded to parallel the IPP System Service (and be so renamed).
 - (iii) The Resource Service structure and elements would be incorporated into the System Service.
 - (iv) Deprecated elements would be removed.
- (b) SM3 would include new features and Services.
 - (i) Notification would be added.
 - (ii) The Cloud Model would be incorporated and discrepancies with IPP Infra aspects resolved.
 - (iii) A 3D Print Service reflecting IPP 3DPrint would be added.
 - (iv) There would be provision for a 3DScan Service, although details will follow the IPP 3D Scan development.
- (c) Development will follow the Schemata Development Process and Approval will require the full voting process.
- (d) Considering the effort involved, certain aspects of the model (such as the WSDL or the rigorousness of the XML) may be omitted

6) Next Steps and Action Items

- (a) Next Semantic Model Workgroup conference call will be at 3PM EDT, May 16, 2016.
- (b) Action Items:
 1. Draft of JDFMAP prototyping requirements (Bill Wagner)
 2. Contact PWG members to prototype JDFMAP pending JDFMAP requirements (Paul)
 3. Extract and remap names of IPP registry elements (Bill)
 4. Extract element name list from schema (Daniel)

Submitted by Bill Wagner 3 May 2016