Semantic Model WG Face-to-Face Minutes
February 6, 2014

Daniel Manchala called the meeting to order at approximately 9:30 PST on February 6, 2014. Meeting start was delayed somewhat by have to set up in new meeting room and finding alternatives to extremely slow Wi-Fi. The SM3 meeting was recessed at about 10:35 PT for a break, followed by a Mopria presentation (not part of SM3 meeting). The SM3 meeting resumed at 1:00 PM, lasting until about 4:00PM.

Attendees

G. Gupta (Oki)
Fred Lundquist (Pagetech)
Daniel Manchala (Xerox)
Ira McDonald (High North, call in)
Joe Murdock (Sharp)
Bob Pooley (Pagetech)
Rainer Prosi (CIP4 & Heidelberg)
Roarke Randall (Toshiba)
Nobert Schade (Conexant, call in)
Mike Sweet (Apple, call in)
Paul Tykodi (TCS, call in)
Bill Wagner (TIC)
Rick Yardumian (Canon)
Peter Zehler (Xerox)

Administrative Items

1. PWG IP Policy accepted implicitly from agreement in preceding meetings
2. Daniel presented the meeting agenda and other meeting slides (http://ftp.pwg.org/pub/pwg/sm3/slides/Semantic-Model-Feb_14.pdf)
3. There were no previous minutes to be approved and no identified action items.

CIP4/JDF Presentation

Rainer Prosi gave a presentation on CIP4 JDF and JMF. Slides are accessible at ftp://ftp.pwg.org/pub/pwg/sm3/slides/CIP4-IPP.pdf. Presentation considered basic similarities and differences between CIP4 and PWG (IPP) approaches that have a bearing on SM3 mapping effort.

1. Terminology Conflicts - Discussion different meanings for certain critical terms
   a. CIP4 'Device' corresponds better to PWG 'Service'
   b. CIP4 'Machine' corresponds to PWG 'Device'
   c. CIP4 'User Intent' is relative to final product while PWG 'User Intent' is relative to reported capabilities of PWG Device. (e.g., CIP4 User Intent might be for a business card in its final cut form; PWG User Intent in this case might be for a group of business card images printed on a sheet of card stock)
   d. Documenting CIP4 vs PWG terminology necessary for mapping.

2. Scope
   a. JDF Job Definition Format – is a job ticket structure perhaps best correlated to PJT (Printer Job Ticket). JMF Job Messaging Format might be correlated to IPP.
   b. Related to 1(c) above, JDF tends to define processes necessary to achieve desired product while PJT/IPP identifies what capabilities of a specific device are to be used.
   c. JDF typically deals with highly capable machines and indeed groups of machines, while PWG addresses a wide range of single devices ranging from simple desk-top printers on up.
   d. IPP can provide the capabilities of the printer for inclusion in the User Interface, with the job ticket request reflecting the printer capabilities and constraints.
   e. A possible approach would use JDF to define a product, with portions of the definition being mapped to IPP for interface with specific devices.
   f. PWG efforts to address light production printing, as in IPP2.2 narrow the gap somewhat between JDF
   g. Gang jobs are out of scope for IPP.
   h. JDF takes care of the (upload/download, use) resources. Semantic model includes Resource Service but there isn't an IPP binding of the SM Resource Service specification.
3. JMF (Job Messaging Format)
   a. The language used to communicate between JDF agents and controllers is the Job Messaging Format (JMF). It does not have a Discovery mechanism. IPP-Everywhere uses Bonjour (MDNS), LDAP. A local (network) discovery mechanism such as MDNS may be desirable for JMF/JDF.
   b. JMF like IPP provides feedback of both device and job information - periodically and/or event driven. But although query response identified in Semantic Model, IPP notification is not. *
   c. Media - both IPP and JMF provide details of reference id, details of specific attributes and what is in the selected tray.
   d. Should Mapping effort include IPP/JMF mapping?
4. JDF-IPP Mapping Issues (summary)
   1) Does IPP describe Intent or Process? IPP communicates the values of the device-identified features that the user wishes to have used on his job.
      a) What applications are generating IPP? Drivers for applications in MS Windows, Apple, Linux etc.
      b) How much information do the end users have? IPP capable of providing full information about device (machine) capabilities and status, Job Status, and Job Ticket (actual values of Job Ticket elements used in producing Job). Application may not make this information available.
      c) Do we send the definition of the business card or the sheet with 8 business cards? In general IPP is intended to define what the destination machine is to do. For typical printer, this would be defining the sheet.
      d) How are Gang jobs handled? IPP does not address this.
   2) Handling of Job Independent data. Fonts, forms, etc are handled by Resource Service, but method of communicating this data is not included in IPP.
      a) Does IPP define:
         i) Capabilities exchange (Glorified PPDs) ? Yes.
         ii) Database synchronization?
            (1) Paper Catalogs? Yes. Media Collection/ named media

(2) Users? Users are identified in IPP with access rights limitations depending on job ownership.

3) Is IPP Unidirectional or Bidirectional? Bidirectional, in the sense that every operation must have a response. However, IPP and the PWG Semantic Model generally follow a Client-Server form, with services not initiating communication. The exception is in for asynchronous notification with is loosely provided for in IPP but not yet covered in the Semantic Model.*
   a) Are we only sending jobs or are we getting information back?
      i) How Often (Intermediate feedback: JMF)? IPP and SM Provide for response to status queries. IPP includes capability for notification subscriptions.
      ii) When (only at end: Audits) ? Can be on request, on defined events (e.g., next sheet) and on delivery of receipt(actuals at job end)
   b) What is the level of information?
      i) Device details? - as requested or subscribed to for notification
      ii) Product Details? as requested or subscribed to for notification
4) How are Media addressed and handled? In IPP/Semantic Model, media can be identified by characteristics (media collection) of by location (media tray).
   a) "Whatever is in the selected tray"? Yes.
   b) All gory details via specific attributes? Yes. (media Collection)
   c) Reference by ID to a device-internally maintained paper catalog? (Named media)
5) Do IPP printers know to "Do what makes sense"? It is intended that defined defaults and constraints combined with basic design will do what makes sense, provided that User-identified Fidelity and job-mandatory-attributes do not preclude such actions.
   a) Are context sensitive defaults supported? Example: Does a Trim command combined with booklet making imply 3-sided Trimming, or do we have to specify which sides to trim? Generally, IPP does not include detailed specification of how a sequence of operations are done, with the machine determining the sequence. However, as IPP expands to cover more complicated capabilities, it includes ability to specify sequences when the order has an effect on the product.
   b) What is the anticipated command fidelity? Depends on user supplied Fidelity and job-mandatory-attributes values.
6) Additional PWG work - Which Standards / Technologies should we discuss that can be leveraged by both groups.
   a) Mapping JDF to full PWG Job ticket
   b) Mapping JMF to IPP?
   c) Potential for adopting IPP Everywhere discovery to CIP4 environments?
7) CIP4 Meeting in Vancouver, BC April 7-11 - Include JDF-IPP Mapping, perhaps 2-hour session
8) Tentative approval of formal liaison status between CIP4 and PWG.

SM3 Projects

1. JDF-IPP Mapping
   a. PWG Semantic Model may not fully reflect capabilities in recent IPP extensions. Discussion of mapping effort is consistently comparing IPP with JDF.
   b. Agreed to take JDF mapping out of Mapping Document 1.0 and put in separate document not constrained by form or limited set of semantic model elements that were assumed for the current mapping document. *
   c. Mapping remains SM3 effort, with understanding that Semantic Model Ver 3 should include all IPP attributes. *
   d. Ira is principal editor; Rick will work with Rainer, particularly at Vancouver meeting, to resolve 'sticky' issues*
   e. SM3 conference calls (particularly 17 Feb) will be used to identify sticky mapping issues.*
   f. Ira will send full list of IPP/SM job ticket elements to Rainer *
2. SM3 Schema
   a. Immediate posting of 2.900 schema to allow consideration of needed additions*
   b. Ensure all IPP/2.0, 2.1, 2.2 and extension attributes included *
   c. Address IPP Scan Attributes/Operations (when stable)*
   d. Address Cloud Operations (when stable)*
   e. Paul to get Liquid XML application information to Daniel *
   f. Liquid XML produced schema HTML pix to be made web accessible*
   g. Move base class elements to Scan service
   h. Review Subunits to ensure they are fully up-to-date
3. Nobert's Issues with Scan Service
   a. Resolve question of Constraints and Resolvers
      i. Constraint identifies element value or combinations of elements/values constituting particular condition
      ii. Resolver identifies alternate values to be used in case of identified constraint
      iii. Single Resolver can be addressed by multiple constraints, but a constraint may only have one Resolver
   b. Problem with "ColorEntry" in defining Constraint - issue to be investigated. *
   c. Problem in that any Schema update changes revision level vs desire to reference V1.185.
4. CWMP *
   a. Ira and Thinxtream to do some updates to current draft.
   b. Need to add diagnostic elements to Semantic Model
5. SM3 Specification
   a. Sections 1-3 posted and waiting comments (ftp://ftp.pwg.org/pub/pwg/sm3/white/Sections-1-3-20131216.docx)
   b. Waiting for addition of Transform Service use case.*

c. Subunit section can proceed once subunit portion of Semantic Model is verified as up to date.

Next Steps / Open Actions

Action Items

1. Schema
   a) 2.900 XML is to be posted (Daniel)
   b) Liquid XML application information to go to Daniel (Paul)
   c) Current Schema graphics to be made web accessible (Daniel)
   d) Pursue identified Constraint definition problem (Nobert)
2. Schema for SM3 is to be updated
   a) Add notifications (Daniel)
   b) Ensure all IPP attributes are included (IPP/2.0, 2.1, 2.2, SIX,)(Daniel, workgroup)
   c) IPP Scan to inform SM3 when operations and attributes are stable, for incorporation into schema (IPP WG)
   d) Cloud to inform SM3 when operations are stable, for incorporation into schema (Cloud WG)
   e) Add diagnostic elements (Ira)
3. PJT-JDF Mapping
   a) Make separate specification from PJTMAPv1.0 (Ira)
   b) Send full list of PWG Job Ticket elements to Rainer (Ira)
   c) Current elements to be reviewed during conference calls (17 Feb) to determine problems (SM3 WG)
   d) Rick will work with Rainer, particularly at Vancouver meeting, to resolve 'sticky' issues
4. SM3 Specification
   a) Add Transform Use Case (Paul)
   b) Review Sections 1-3 (SM3 WG)
5. CWMP
   a) Update Spec (Ira)

Bill Wagner, 11 February 2014