



ISTO PWG Standards Update


Interoperability - the Key to Effective Standards

Harry Lewis – Chairman ISTO PWG

The “Printer Working Group” - Early Years -

- 1991 – The “Network Printer Association”
 - IEEE 1284.x series standards
- 1993 – Renamed the “Printer Working Group”
 - Multiple affiliations, formalized practices
 - Interop Testing instituted
 - Standard Printer MIB RFC-1759 (IETF)
 - Internet Printing Protocol RFCs-2910/11 (IETF)
 - Job MIB RFC-2707 (IETF)
 - P1394 (IEEE)

The “Printer Working Group” - Today -

- 1999 – Self sufficient, non-profit
 - Incorporated under  **IEEE-ISTO**
Industry Standards and Technology Organization
affiliated with the IEEE and the IEEE Standards Association
- Sub-charter as appropriate
 - IETF
 - Printer MIBv2, Finisher MIB, IPP Extensions
 - W3C
 - XHTML-Print, CSS-Print Profile
- Co-locate and cross pollinate when possible
 - FSG, P2600 Print Security, Microsoft UPnP



PWG Membership

- Low cost, self sustaining
 - Major Corporate Membership
 - > \$10M
 - \$1000/year
 - Individual (small company) Membership
 - < \$10M
 - \$250/year
 - Non voting member
 - Any productive contributing member

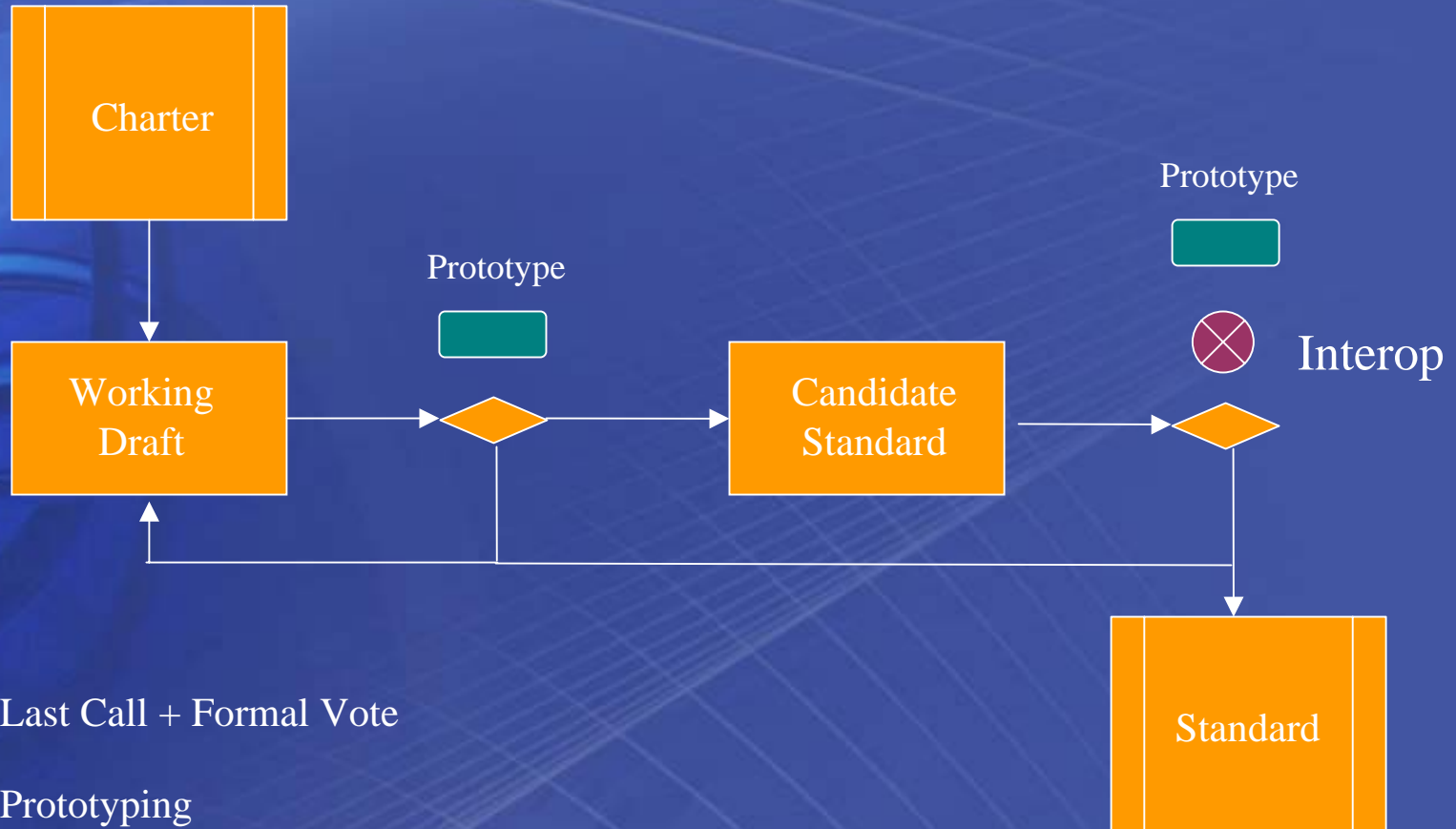
PWG Members



PWG Operations

- 5 – 7 face to face per year (typical)
 - Plenary, Working groups, BOFs
- Chartered working groups conferences
 - Weekly or bi-weekly typical
- Interop Events
 - As needed

PWG Process



 Last Call + Formal Vote

 Prototyping

 Interop Testing

Why Interop test?

- Lack of interop is obvious when standards are straightforward
 - 60Hz, Rail, meter
- Demonstration required for complex IT standards
- Reduces premature precedence setting
- Interop vs certification

Significant PWG Interop Events

- 1996 – Printer MIB v1
 - Stardust Labs, Campbell, CA
- 1998 – IPP
 - Microsoft, Redmond
- 1999 – IPP
 - Novell, Provo
- 2001
 - Oak, Woburn
- 2003 – Print Services Interface
 - Remote

PWG Industry Partnership

- Common Semantic Model
 - CIP4, FSG, PPML
 - UPnP, Bluetooth Print SIG
 - DMTF CIMv3 (aligning)
- Semantics related to
 - Print Job monitoring
 - Media Standardized names
 - Device metering (in development)

Semantic Model

- Information Architecture
 - Central information model
- Structured representation of information for a specific domain (ex. Print Jobs)
- Reusable schemas
 - Schema elements and attributes represent the domain concepts (i.e. the “semantics”)
- Purpose of semantic model
 - Merge and eliminate multiple schemas
 - Unify industry semantics
 - Facilitate transformation when necessary

PWG Semantics

- Job
 - Description, Status, Processing, Actual
- Document
 - Description, Status, Processing, Actual
- Printer
 - Document, Status, Defaults
- Job Actions
 - Create, Cancel, Delete, Hold, etc.
- Printer Actions
 - Enable, Disable, Purge, Pause, Resume, etc.

Document Description Elements

Compression

DocumentCharset

DocumentDigitalSignature

DocumentFormat

DocumentFormatDetails

DocumentFormatVersion

DocumentMessage

DocumentName

DocumentNaturalLanguage

Impressions

KOctets

LastDocument

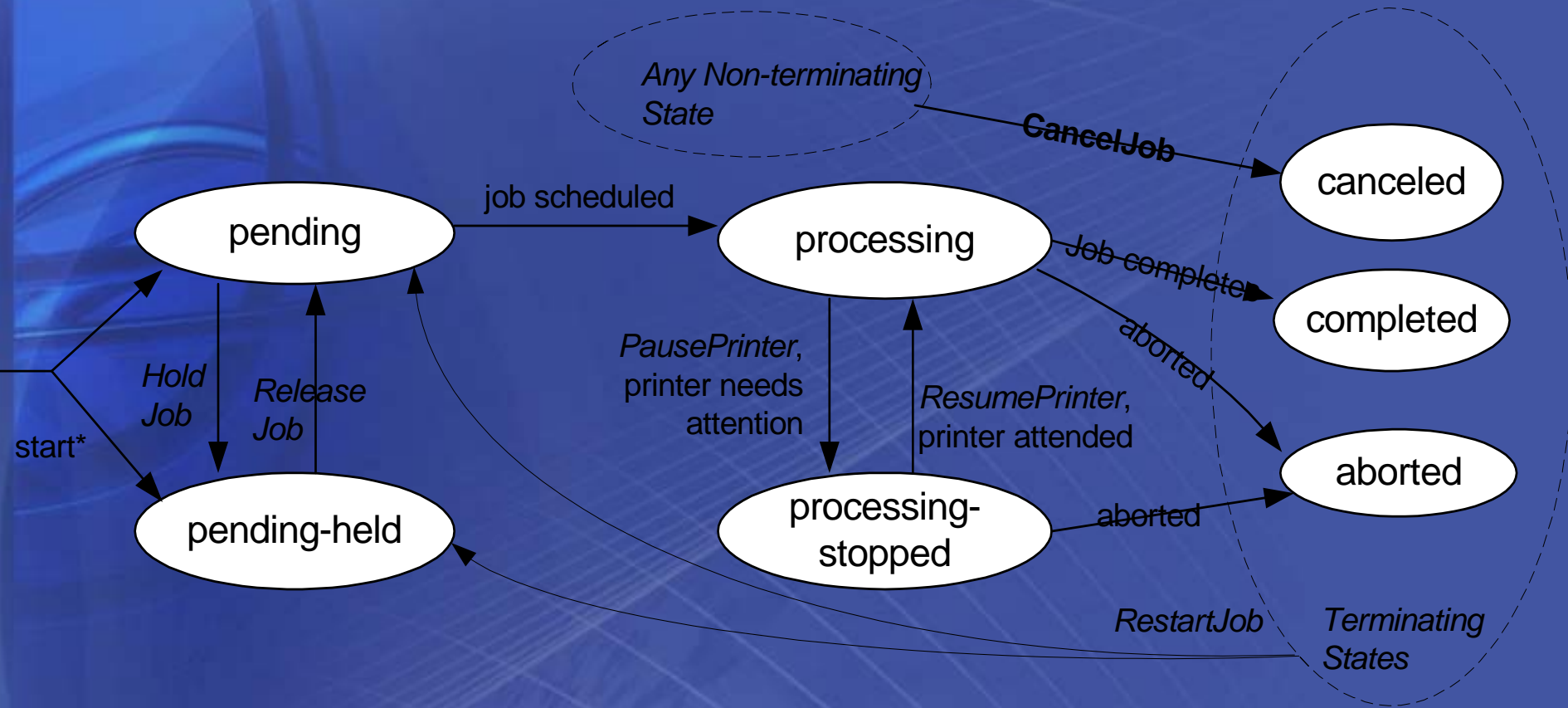
MediaSheets

PageOrderReceived

Document Description snippet

```
<xsd:complexType name="DocumentDescription">
- <xsd:sequence>
- <xsd:element ref="Compression" minOccurs="0" />
- <xsd:element ref="DocumentFormat" minOccurs="0" />
- <xsd:element ref="DocumentFormatDetail" minOccurs="0" />
- <xsd:element ref="DocumentName" minOccurs="0" />
- <xsd:element ref="DocumentNaturalLanguage" minOccurs="0" />
- <xsd:element ref="Impressions" minOccurs="0" />
- <xsd:element ref="KOctets" minOccurs="0" />
- <xsd:element ref="LastDocument" minOccurs="0" />
- <xsd:element ref="MediaSheets" minOccurs="0" />
- <xsd:element ref="PageOrderReceived" minOccurs="0" />
- <xsd:any namespace="##any" minOccurs="0" maxOccurs="unbounded">
- <xsd:annotation>
- <xsd:documentation source="www.pwg.org">This allows vendor and site specific extentions to the Job template
  schema</xsd:documentation>
- </xsd:annotation>
- </xsd:any>
- </xsd:sequence>
- </xsd:complexType>
- <xsd:element name="DocumentDescription" type="DocumentDescription" />
```

Job Life Cycle Model



* start = PrintJob, PrintUri, CreateJob

PWG Candidate Standards

- Common Semantic Model
- Print Services Interface (Web Services Printing)
- IPP Extensions
 - Job Extensions Best Practices
 - Document Object
- IPP Fax including PDF/is
- Media Standardized Names
- XHTML-Print, CSS-Print (migrated to W3c)

Latest

- Web Based Management & Monitoring
 - Web Services MFP and Print Service Mgt
- Character Repertoire
 - For quick and easy mobile printing
- Printer MIB v2, Finisher MIB (IETF)

Documenting Best Practices

- Eventing
- Discovery
- Security

Future Possibilities

- Flash Download
- PSI extension for transform services
- Secure print protocols

2400 Meeting Schedule

- Feb 23 – San Jose, CA
- April 19 – Washington, D.C.
- May 24 – Tokyo, Japan
- July 19 – Montreal, Canada
- Sep 20 – Madison, WI
- Nov 15 – T.B.D.

Conclusion

- Contribute to and leveraging Common Semantic Model
- Prototype and support interop testing
- Consider PWG membership
- For More Information
 - <http://www.pwg.org>