

# 3D Printing BOF Meeting Minutes

## April 28, 2015

Meeting was called to order at approximately 10:30am PT April 28, 2015.

### Attendees

Aveek Basu (Lexmark)  
Till Kamppeter (Canonical)  
Smith Kennedy (HP - call in)  
Jeremy Leber (Lexmark)  
Daniel Manchala (Xerox)  
Ira McDonald (High North)  
Matthew Morikawa (Kyocera)  
Joe Murdock (Sharp)  
Mike Sweet (Apple)  
Paul Tykodi (TCS - call in)  
William Wagner (TIC)  
Rick Yardumian (Canon - call in)

### Agenda Items

1. IP Policy/Minutes
  - a. IP policy announced, Mike Sweet taking minutes
2. Slides:
  - a. <http://ftp.pwg.org/pub/pwg/BOFs/3d-printing/3d-bof-april-2015.pdf>
  - b. IDC analyst gave a talk at RSA concerning security concerns about cloud-based 3D printing solutions
  - c. Don't focus on G-code/S3G because it exposes too much
  - d. Multiple materials:
    - Support material
    - In-fill material
    - Model material(s)
  - e. Also multiple colors in the future
  - f. Supports - aren't they device-specific?
    - Yes and no - very difficult to determine when they are needed
  - g. Need to draw a fine line on exposing device/technology specific info
  - h. File formats:
    - STL is a dead-end but widely implemented
    - DAE is open and could be extended to support materials, but not directly supported by most 3D slicer software
    - AMF is closed and being developed/extended by ISO
  - i. Scoping:
    - Stick with "personal manufacturing" printers
    - plus Cloud solutions

- with high-level formats (no G-code)
- j. Continue 3D BOFs with longer time slots
- 1. White Paper - IPP 3D Printing Extensions (Mike):
  - a. <http://ftp.pwg.org/pub/pwg/BOFs/3d-printing/wd-apple-ipp3d-20150413-rev.pdf>
  - b. Will update and review on mailing list and in conference calls.

## **Next Steps / Open Actions**

- Continue to discuss white paper on 3d-printing@pwg.org list and potential conference call.
- Reach out to 3D printer manufacturers
- Action: Mike and Paul to contact ASTM about opening AMF spec (ONGOING)