

IT/00-0157

NCITS/W1 voted by a tally of 8-0-0-1-9 (total membership) to approve this new W1 project.

NCITS-W1 2000-0141

Proposal for a Project to Develop a New ANSI/NCITS Standard

1. Source of the Proposed Project
 - 1.1 Title: ANSI/NCITS Standard on All-In-One Toner Cartridge Life for Monochrome (Black and White) Laser Printing, Copying, Facsimile and Multifunction Devices
 - 1.2 Date Submitted: February 7, 2000
 - 1.3 Proposer: NCITS W1

2. Process Description for the Proposed Project
 - 2.1 Project Type: D -- Development within NCITS W1
 - 2.2 Type of Document: Standard
 - 2.3 Definitions of Concepts and Special Terms:
 - End of life -- The point at which the cartridge is considered functionally empty.
 - Individual page yield -- The number of "standard page file" pages printed between cartridge installation and end of life.
 - Reported page yield: The average page yield expected, calculated using a hypothesis test of the means with 95% confidence.
 - 2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.: All cartridge life standards are intended for use in a closed system.
 - 2.5 Recommended NCITS Development Technical Committee: NCITS W1
 - 2.6 Anticipated Frequency and Duration of Meetings: Monthly teleconferences will be held until June 2000. One in-person meeting is scheduled for April 2000. After June 2000, teleconferences will be held every other month.
 - 2.7 Target Date for Initial Public Review (Milestone 4): December 2000
 - 2.8 Estimated Useful Life of Standard: It is estimated that this standard will have a life of ten years.

3. Business Case for Developing the Proposed Standard
 - 3.1 Description: This national standard will address test methods for measuring the usable print life (longevity) of an all-in-one cartridge filled with toner used to output files on lightlens and digital copiers and digital printers. Initially,

monochrome electrophotographic printers will be analyzed. Eventually, color electrophotographic and ink jet cartridges, will be analyzed. This standard will select the appropriate test file, the measurement methodologies, and end of life determination that apply to the printed output's evaluation. It will determine the best way to select, test and compare toner cartridges and specify how the data is to be reported and used. The standard will be written with the large-scale office equipment consumer as its audience.

- 3.2 Existing Practice and the Need for a Standard: There are numerous, ambiguous standards for determining toner cartridge life expectancy. The disparate approaches lead to confusion among purchasers, testers, and manufacturers. The confusion leads to inefficient and costly testing. As ambiguous standards proliferate within the office equipment testing industry, there is a tremendous amount of uncertainty regarding the life expectancy, i.e., how many prints, users can expect from cartridges. There is a need to standardize the way testing for toner cartridge yield is approached in addition to how it is reported. Consistent testing and reporting will facilitate even, fair, reputable industry statistics and expectations.

Candidate objectives for this effort include:

- 1) Methods for determining end of life when no low/out of toner sensing is available.
- 2) Methods for determining end of life when no toner/toner low indicators are available.
- 3) Methods for determining end of life when the test printer does not allow printing to continue beyond a certain point.
- 4) Test parameters and conditions for printing and sampling.
- 5) Procedures for installation and sampling.
- 6) Procedures for statistically determining the reported page yield.

- 3.3 Implementation Impacts of the Proposed Standard:

3.3.1 Development Costs: This standard will be developed through the voluntary contributions from and cooperation between NCITS W1 members.

3.3.2 Impact on Existing or Potential Markets: This standard will have a positive impact on office equipment purchase and applications. It will provide a stable, neutral benchmark for uniform testing and reporting in the office equipment industry and market. The standards methodology will result in unified testing and increased consumer trust in reported results. The standard will also support accurate methods to estimate the consumption of toner cartridges. The ability to plan information systems based on accurate, reliable usage will increase the overall efficiency of the market's economy.

3.3.3 Costs and Methods for Conformity Assessment : The committee will consider the results of the toner cartridge yield testing through the voluntary efforts of the various participants. Using this method for conformity assessment, whereby conformity testing is done on a self-assessment basis, all costs are borne by the organizations of the various committee members.

Typically, the conformity assessment is conducted by the participating organizations as adjunct activities of their normal operations.

3.3.4 Return on Investment: The return on investment for this development project is expected to be the increased market acceptance of toner cartridges that are fairly tested and evaluated combined with the decrease in required technical support and customer service for toner cartridges with misleading statistics juxtaposed against the design, test and reporting investments for this standard's development.

3.4 Legal Considerations

3.4.1 Patent Assertions: Calls will be made to identify assertions of patent rights in accordance with the relevant NCITS, ANSI, and ISO/IEC policies and procedures. If any patent assertions are identified during the call, NCITS W1 will notify NCITS immediately.

3.4.2 Dissemination of the Standard: Drafts of this document will be disseminated electronically. Dissemination of the final standard will be restricted as the document becomes the property of NCITS, ANSI and the ISO/IEC. A call will be made for any intellectual property right (IPR) assertions to determine if such assertions will hinder the document distribution. If IPR assertions are made, the proposer will notify NCITS W1 and, subsequently NCITS W1 will notify NCITS.

4. Related Standards Activities

4.1 Existing Standards include but might not be limited to:

- 4.1.1 American National Standards Institute (ANSI) / American Society of Testing Materials (ASTM) 1856 Standard Practice for Determining Toner Usage for Printer Cartridges
- 4.1.2 ANSI/ASTM F335 Terminology Referring to Electrostatic Copying
- 4.1.3 ANSI/ASTM IT2.17-1995 (ISO 5-4) Density Measurements- Part 4
- 4.1.4 ANSI/ASTM IT2.17-1995 ANNEX A1 Density Measurements- Part 4

4.2 Related Standards Activity:

- 4.2.1 ANSI/ASTM TG F05.0401: Test Method for Comparing Printer or Copier Cartridges (proposed)
- 4.2.2 ANSI/ASTM TG F05.0402: Proposed Guide for Evaluating All-In-One Toner Printer Cartridges (proposed)
- 4.2.3 ANSI/ASTM TG F05.0407: Test Method for Density and Background of Monochrome Office Printer Output (proposed)
- 4.2.4 ANSI/ASTM standards development project "Determining Cartridge End of Life Point" (proposed)

- 4.2.5 ISO/IEC JTC1 SC28 N376 "Determination of Yield of Consumables (toner/ink, black) for copiers, printers, and facsimile equipment and their combinations."
- 4.2.6 ISO/IEC JTC1 SC28 N351 "Measurement of Cartridge Life."
- 4.3 Recommendations for Coordinating Liaison: Buyers Lab and Torrey Pines test laboratories and companies
- 4.4 Recommendations for Close Liaison: American National Standards Institute (ANSI) American Society of Testing Materials (ASTM) F05 Committee