Comparing apples with apples – Helping you make the right choice

by Akira Saito, Chair of ISO/IEC JTC 1/SC 28, Office equipment

Among the various subcommittees of the joint technical committee ISO/IEC JTC 1, *Information technology*, the most product-oriented is subcommittee SC 28, *Office equipment*.

One of the subcommittee's tacit missions is to promote fair trade in the office equipment market. Specifically, ISO/IEC JTC 1/SC 28 serves manufacturers by standardizing the frameworks and processes which they use to evaluate the design, performance and quality of their products, in exactly the same manner as their competitors do. As a result, users are given an opportunity to make informed apple-to-apple comparisons of products in their purchase decisions.

Speed – A vital gauge

The speed with which output pages can be printed is a vital gauge of printer or copier performance, making standards indispensable for productivity measurement methods.

Two such standards developed by subcommittee SC 28 have been available for almost a decade. These are ISO/IEC 14545:1998 for copying machines and ISO/IEC 10561:1999 for low-end printers. However, both these standards are designed for black-and-white analogue machines, and do not take into account job streams and other key factors that may influence the measured throughput rate.

To fill the gap, SC 28 has devoted several years of effort to developing new standards providing methods for measuring productivity for digital printing (ISO/IEC 24734:2009) and digital copying (ISO/IEC 24735:2009). Both just published, the two standards were developed in parallel with minimal deviation from one another.

How many pages to a cartridge?

An important concern among users, which emerged about a decade ago due mainly to the significant cost of cartridges, is the difficulty in estimating cost per printed page when using a particular model of printer. Identifying this market need, SC 28 began to develop a method for measuring yields for printer cartridges in 2001.

This project, initially covering monochrome toner cartridges for electro-photographic (laser) printers, was later extended to colour toner and ink cartridges for inkjet printers. **Figure 1** shows the collection of standards in this area, including projects under development.

A question of image quality

How do you evaluate the printed quality of an image when the original is a computer document and there is no hardcopy original for comparison?

ISO/IEC 13660:2001, *Information technology – Office equip-*

ment – Measurement of image quality attributes for hardcopy output – Binary monochrome text and graphic images, was developed to address the question. This standard defines attributes such as graininess, mottle, blur and raggedness, as well as appropriate measurement methods.

The subcommittee is currently working on a revision of ISO/IEC 13660, to be published as ISO/IEC 24790. The draft incorporates recognized improvements in measurement algorithms, adds the "banding" attribute to quantify an additional class of image defects, and explicitly separates psychological factors from physical measures in the evaluation of hardcopy images.

An obvious problem

Comparison of products at a shop or on a Web site is difficult if specification sheets from different manufacturers are composed of different items, or similar items with different measures.

To solve this obvious problem, a number of standards have been developed addressing minimum information to be included in specification sheets for a range of office equipment. Among the subjects covered are copying machines (ISO/IEC 11159:1996), printers (ISO/IEC 11160:1996), image scanners (ISO/IEC 14473:1999), facsimile equipment (ISO/IEC 15404:2000) and data projectors (ISO/IEC 21118:2005).

About the author

Akira Saito is a part-time advisor to Japan Business Machine and Information System Industries Association. Now retired from IBM, Mr. Saito is in his sixth year as Chair of ISO/IEC JTC 1/SC 28, *Office Equipment*. In 2004, he received a Blue Ribbon Medal from the Japanese government for his distinguished services in the field of IT standardization over many years.

Squaring up to new issues

In addition to product performance and quality, market demand has been evolving in recent years to include environmental and other concerns, and the subcommittee has adapted accordingly.

Today, environment-conscious design of office equipment is becoming increasingly important for a sustainable society. Recognizing that SC 28 should squarely address environment issues relating to office equipment, the subcommittee has developed:

- **ISO/IEC 24700:2005**, *Quality and performance of office equipment that contains reused components*
- **ISO/IEC 28360:2007**, *Determination of chemical emission rates from electronic equipment.*

Accessibility, too, has become more than a nice-to-have feature, and is of growing importance, especially in an ageing society. In 2008, the new ISO/IEC 10779, *Office equipment accessibility guidelines for elderly persons and persons with disabilities*, was published. The standard's guidelines are intended to facilitate evaluation of equipment for operation by persons with the widest range of capabilities, including persons with disabilities, whether permanent or temporary.

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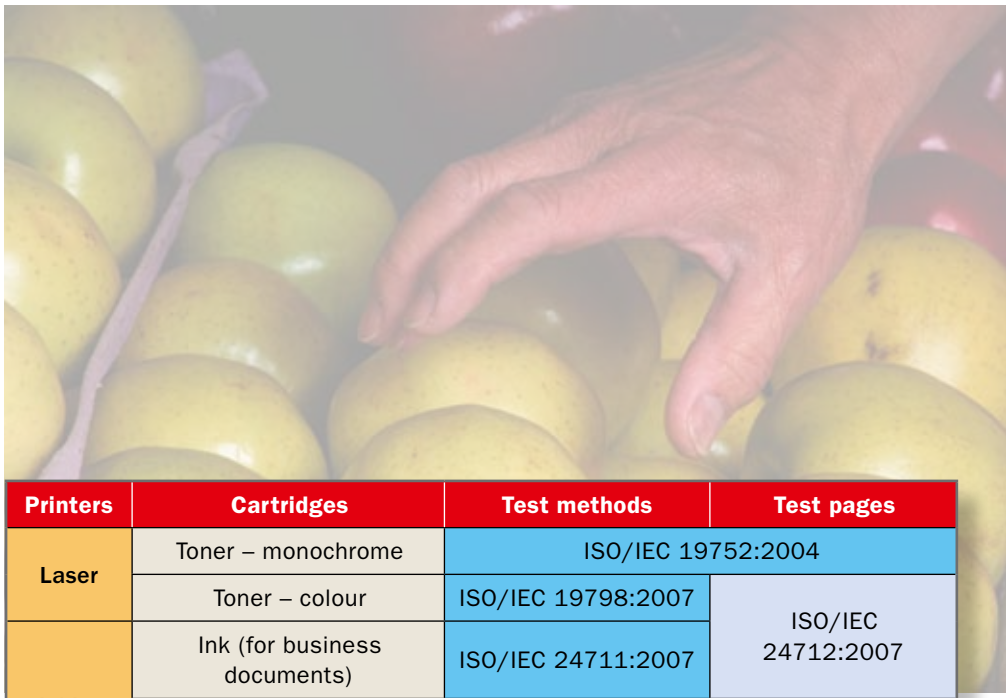

Printers	Cartridges	Test methods	Test pages
Laser	Toner – monochrome	ISO/IEC 19752:2004	
	Toner – colour	ISO/IEC 19798:2007	ISO/IEC 24712:2007
Inkjet	Ink (for business documents)	ISO/IEC 24711:2007	
	Ink (for photos)	Work item ISO/IEC 29102	Work item ISO/IEC 29103

Figure 1 – *International Standards for measuring yields for printer cartridges. (See also "Supply standards: Past and future",* ISO Focus*, January 2008).*

As market demand evolves, ISO/IEC JTC 1/SC 28 will continue to listen and respond with the appropriate tools. ■