

Chip Talk

Where leaders of the smart card revolution air their views

Making the case for better ID cards

UV and IR security features on cards have been part of the industry for quite some time. However, demand for added security features by a wide range of card issuers has made consistent quality of such hidden security features more important. Tom Kleeman, CEO of Spartanics, tells *CTT* that card manufacturers have better technology for UV and IR quality control at their disposal, and card issuers can expect more from their secure card suppliers.

"UV and IR security features, because they are hidden in the visible spectrum, have always been important in aspects of fraud prevention in most types of high value cards. Financial cards, access control cards, ID cards – many, if not most, of these have had UV or IR features dating back to their original designs.

Guarantee integrity

"As we all know, growing threats of identity theft, terrorism, and credit card fraud have made every card security feature gain in importance. Last year, as a supplier to card manufacturers worldwide, we saw for the first time that some card issuers were newly demanding that the card manufacturers which supply them give guarantees on the integrity of the security features applied to their cards.

"For example, Digimarc Corporation recently secured a four-year contract to supply Mexico with millions of voter ID cards. For such an important application, ensuring the integrity of these cards is clearly important to both Digimarc and the Mexican government. To ensure the integrity of a wide range of security features required by the Mexican government for this Voter ID card system, Digimarc uses an automated inspection system that not only scans for regular defects such as lamination problems, but also scans for problems with bar codes, signature boxes, fingerprint boxes, presence of portraits, security decals, IR bar codes and UV security features.

"This kind of automated inspection for UV security features, with a throughput of 10 cards per second, dramatically changes both the accuracy and costs of manual inspection for security features in cards. Imagine the alternative – lines of workers with black lights doing a one by one inspection of each card, and as one might imagine, rarely applying the same quality standards throughout the work day. Indeed, there are compelling bottom line reasons for card manufacturers to automate their inspection

methods, even if they are not yet serving the growing markets for ID cards and similar security feature-rich cards.

Automated inspection technology

"Because the security features on ID cards and similar secure cards are widely varied, as are the requirements for the quality of these features, automated inspection technology is maturing into distinct forms with varying capabilities that match the requirements of different applications and keep costs in line.

"For example, some cards manufacturers that deal strictly with high value financial cards with less complex UV image features can simply use a single pass inspection system, provided it is guaranteed for 100% accuracy, that is equipped to verify the presence of UV or IR inks. In practice, manufacturers couple such simple UV ink verification with random manual spot checks to double check that there is not only ink present, but that the image printed with those inks is as planned. Even with the costs for manual inspection, this type of UV/IR ink verification costs only about 10% of full blown UV/IR image inspection systems, so card manufacturers can obtain the best production costs if and when the UV image integrity is not super-critical.

"A second approach, which is only moderately more expensive than ink verification, lets manufacturers run cards through an automated inspection system twice – first in the visible spectrum, and then re-run in the desired UV or IR spectra, or vice versa. The downside of this approach, of course, is that one needs to factor in the added costs of multiple run inspections and the not insignificant problems of extra human handling, i.e. the predictable number of defects added to cards exactly by the processes that are trying to spot them.

Getting inspection right

"When the integrity of UV or IR images is non-negotiable, the best-suited types of inspection systems are ones that have two cameras at work simultaneously – one for the visible spectrum and one for the desired UV or IR spectrum. This means thorough inspections are done in one pass, without human error or the problems of extra handling added potential defects.

"All three of these types of UV/IR automated inspection systems have another feature that should be of interest to all issuers – the audit trails that are created in normal operation of the inspection system. There is always a record to go back to if disputes about the quality or integrity of security features arise. From the manufacturers' perspective, these trails have the added advantage of being in real-time, which means that they can go in and correct errors while a job is running, instead of the considerable expense of going through a repeat setup of a job in order to correct problems.

A growing trend?

"We expect use of UV/IR automated inspection technology to grow, for several reasons. First, we have seen that the security trends in ID cards tend to move into the financial markets. Although this is not yet routine in North America, most Europeans now expect major retailers to verify UV/IR card features at the point of sale, and manufacturers of financial cards in these markets do need to take steps to ensure to credit card issuers that these UV/IR card features are intact.

"Second, the return-on-investment for the best automated inspections systems is quick, and those manufacturers that were the first to use such systems are clearly pulling ahead of their competitors, in part because of this technology. Manufacturers using manual methods previous to getting such systems cut their inspection costs by a minimum of 75-80%. Moreover, manufacturers that traded up to smart self-learning single run inspection systems from the earlier multiple run inspection machines cut 15-30% of their costs. This reduction in costs could be even more if one considers the added costs of applying holograms and similarly expensive features to reject and falsely rejected cards.

"Third, the societal forces that are driving demand for more complex security features on ID and other cards are not expected to go away any time soon. On the contrary, ID cards look to be one of the fastest growing sectors in the market, and manufacturers and their suppliers are doing whatever is necessary to meet the demand for better ID cards, delivered faster, and with unfailing quality."

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