



newsletter

Ltd.

The management
Newsletter for all
industries involved
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technologies.

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The next technology specialist to be added....

....to the corporate staffs of computer and auto ID companies may have to be a Fashion Coordinator employed to design the accessories for wearable computers.

The New York Times (3/19/92) called this new phenomenon "Computer Couture." With tongue in cheek, the newspaper described how Grid Systems (Fremont, CA) of the "Silicon Valley school of design," staged a "mock fashion show" which featured a computer called the Palmpad that can be strapped to the wrist or lower arm. "Suitable for business or casual dress," the *Times* reported, "the device leaves the hands free for other tasks when the computer is not in use....It won't be too long, they say, before many types of computers are worn like clothing accessories and treated that way as well."

Not to be upstaged, in mid-March the automatic identification industry entered the fashion world when Symbol Technologies introduced their Application Productivity System (APS) 3395. This product combines three elements developed by Symbol: the HF 2001, a laser scanner (about the size of a TV remote control device) that is mounted on the back of the hand for "point-and-scan" bar code reading; the AP 3390, a lightweight, forearm-mounted keyboard/display module; and a waist-mounted portable computer, with or without RF capability.

The purpose of all this equipment is to provide portable ("wearable") devices that can be carried everywhere and are no longer confined to their traditional shapes. In case of Symbol's APS 3395, the system allows for hands-free bar code scanning, data collection and radio data communications. This initial design was specifically intended for use by warehousemen who would be free to use both hands to select, load and deliver an order for shipping.

We tried one in our office two weeks ago. After strapping on the three separate devices -- to the back of the hand, forearm and waist -- the scanner is activated by raising the forefinger (as if one were pointing to a bar code). In doing so, the back of the finger is pressed against the scanner's on-off switch, which activates the laser and scans the symbol. On this unit, this "finger" switch has replaced Symbol's traditional laser gun trigger.

Symbol believes that this novel concept opens up many possible applications where hands-free, real-time data collection can improve efficiency and production. The original idea was brought to Symbol for development by a major independent systems integrator which was working on this project for one of



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the country's largest wholesalers of consumer products. The finished model -- which took about six months to complete -- was a result of the combined efforts of the systems integrator, the customer and Symbol's portable data terminal (Costa Mesa) and scanning (Bohemia) divisions. Units have already been tested at the customers' warehouse. According to a Symbol spokesman, the customer was pleased enough with the results to have placed a \$6 million order.

COMMENT

Our personal reaction to the APS 3395 units? We had some difficulty with the ergonomics. During our trial, the finger-activated switch didn't always work and the back-of-the-hand scanner didn't want to stay put in one position. We were also somewhat daunted by the idea of completing an 8-hour shift with that hardware strapped to our hand and arm -- even though it weighs less than 1 lb. We must admit, however, that pointing and scanning does open up fascinating future possibilities and it is fairly certain that further miniaturization and improvements will make computers and scanners much more wearable.

This also prompted us to contemplate the fantasy of E.T.'s very talented, shining forefinger -- which no longer seemed so far away.

In another significant award....

....Symbol has sold 5,250 PDT 3300 terminals and LS 8500 (industrial-type, ruggedized) laser guns to United Parcel Service, to expand their automation activity at UPS package tracking and sorting hubs.

SCAN has learned that this multi-million dollar contract, which has not yet been announced, is expected to be just the first installment of UPS's expansion plans in the area of auto ID. It is anticipated that another 10,000 similar units will be purchased by the end of 1993. The exact dollar amount of the contract has not been revealed by either Symbol or UPS, but, as a frame of reference, the combined list price of these units is approximately \$3,000.

As recently as last June....

....it was predicted (by Symbol Technologies' President Ray Martino) that the pending litigation between Symbol and Spectra-Physics would "drag on for a long time." Based on the antagonistic statements that were being thrown about by both sides, a resolution did not seem to be in sight (SCAN Oct 90; Nov 90; May 91; June 91).

[S-P had sued Symbol in 1990 charging unfair competition and other complaints. In April 1991, Symbol countersued specifying infringement of four of its patents.]

Lo and behold, although a final agreement has not been announced, the companies have reached a tentative settlement and all claims will be dropped. According to the terms of the proposed settlement, Symbol will "confirm, clarify and expand its license with Spectra, and Spectra will pay [Symbol] an increased royalty for certain products." In addition, S-P will give Symbol license rights to its existing patents relating to scanners.

The attorneys are still hung up on the final wording (how to define "confirm, clarify and expand," for example) but, according to one source, a final agreement is expected "within weeks."

In a somewhat related event, Macy's has just purchased 5,000 hand-held laser scanners from Spectra, worth an estimated \$3 million. The units selected were S-P's Model SP300s which will support 70% of all of the NCR and IBM terminals and registers in the 50 stores of the Macy's Northeast group.

[This is yet another demonstration that poor retail sales and very difficult financial straits are no deterrent to retailers who recognize the critical need to get bar code scanning up and running in their stores. Even Macy's recent bankruptcy did not deter them from forging ahead with the purchase of systems which will allow them to automate check-out, to improve inventory efficiency and to participate in the benefits promised by Quick Response. This compares to similar decisions by other retail giants -- notably the Federated, Allied and Ames department store chains -- who had also bought bar coding systems after filing Chapter 11.]

In a late-breaking story....

....with meager details as yet, Hand Held Products has posed the following question to the courts: "Does Federal Express have the contractual right to manufacture Hand Held Products' portable barcode scanners?"

According to HHP, the parties agreed in 1985 that HHP would "design, develop and manufacture a portable bar code scanning system -- the SuperTracker -- which would allow Federal Express to enter information into their system the moment a package was received or delivered." HHP contends that this contract also identified those elements which are the exclusive property of HHP.

Recently, Federal Express had indicated that they intend to move rapidly to manufacture the SuperTracker. Because of this plan, HHP is asking the courts "to review their contract and determine the rights of the two companies." HHP hopes that the court will issue a declaratory judgment in its favor.

Jeff Osborne, HHP's VP of Marketing, emphatically told SCAN: "HHP is not suing Federal Express at this time. Our attorneys are merely asking the court to examine the contract and determine the rights of each of the parties. HHP is still currently shipping SuperTrackers to Federal Express. This preliminary move is intended to halt any steps by FedEx to manufacture them on their own."

Acknowledging that Federal Express has been a major customer, HHP President Henry Bennett issued the following statement: "This activity will not have the slightest effect on our business, nor our customer base."

No one seemed too surprised....

....when it was announced in March that Don Anderson was chosen by AIM USA to be its new Executive Director, succeeding Bill Hakanson (SCAN Dec 91, Jan 92).

[Although neither Hakanson nor any AIM US officers have issued any on-the-record statements about his resignation, the general consensus among members we have spoken with privately is that his departure was not

entirely voluntary. His views and style were not considered compatible with the top officers of the organization who decided they needed a change.

Since leaving AIM, Hakanson has launched a new business -- Hakanson & Company -- which intends to manage trade associations and trade shows in the field of "new and emerging technologies." He recently told SCAN that he has already contracted to manage four such shows and also expects to sign up a number of associations to provide administrative support. It may turn out to be Hakanson's best move ever.]

Don Anderson joined AIM US in 1986 as Program and Finance Director and was promoted to Associate Director a year later. He managed the business and finance operations of the organization, including AIM US sponsored events and seminars such as SCAN-TECH and Quick Response. We spoke with him shortly after his appointment to determine his views on the future role and impact of AIM US and AIM International.

Anderson is particularly excited about the prospects for the new AIM US regional programs, to develop local chapters that would mount the special Systems Expos (SCAN July 91). These local moves are intended to attract new customers and expose them to auto ID technology. Based on the expected approval of the AIM Board and membership within the next few months, Anderson anticipates that chapters in St. Louis and Minneapolis will be up and running by this summer. These chapters are driven by three main groups: VARs (50%); AIM-member companies with headquarters in the region (25%); and AIM-member companies with local sales offices (25%).

We asked Anderson his opinion as to whether AIM US was being run primarily by a strong professional staff or by its volunteer members. He replied: "Earlier [under Bill Hakanson], it was a combination and somewhat balanced between the two." Anderson explained that he believes the current AIM officers have committed themselves to "a stronger personal involvement, leadership and dominance. I am more comfortable with this type of strong volunteer leadership," he added. "That may be one of the reasons I was hired. We see eye-to-eye on that. With that philosophy, however, the members must be willing to pay a hefty price in terms of the hours and effort required."

As for the latest developments at AIM International, Anderson expects to participate as the non-voting AIM US member on the Task Force that is working to restructure that group (SCAN March 92). "The next meeting will be in Los Angeles in late April," he disclosed. "One of the challenges will be to attract the multi-national companies to take on a more pro-active role. We want to do this in order to strengthen the organization's funding and to raise the level of participation by those companies. These are the parties that have the most to gain or lose from AIM's successes in completing standards and in helping to expand the total market."

We concluded by asking about the criticism that AIM US has been somewhat lacking in its ability to provide technical support for the industry (except for the excellent work being done by Bert Moore). Anderson agreed that the technical area needed bolstering. He indicated that Joe Shepherd (Xico), AIM's Vice President-Development, has assumed the leadership to correct that deficiency. "Shepherd has excellent credentials and style and has been the driving force in the technical area," Anderson noted.

Our very best wishes to Don Anderson as the new Executive Director of AIM US.

Was there a basic flaw....

....in the AIM/Ohio University Symbology Study that was completed late last year (SCAN Dec 91)?

This question was initially raised by Harry Burke -- independent writer and consultant -- in his January 10 letter to Professor James Fales (Ohio University), who managed the AIM-sponsored project. A copy of Burke's letter went to Sprague Ackley (Intermec), who was last year's Chairman of the AIM Technical Symbology Committee.

We would like to share with you excerpts from Burke's original comments and the subsequent exchange of letters among these three interested parties (all of whom were kind enough to copy SCAN with their correspondence):

[January 10, 1992 - Burke to Fales]

Dear Professor Fales: This is not a letter I enjoy writing. It is not my purpose to sit out here on the twilight edge of bar code civilization carping away at the work of one of the few individuals who...appreciates the tremendous potential possible in our industrial community offered by real time management. Nevertheless, when I saw the first page of the SCAN Newsletter of December, 1991, I exploded....

First: Doubtless, in all of today's sophisticated bar code systems (even UPC)...the reading error rate is absolutely zero -- unless there is a reason for error! If you do not know the reasons for the 23 errors logged in your study, the entire effort was a waste of time...[and] your statistics are meaningless....

Second: A bar code symbol, per se, has no dynamic characteristics whatsoever. It is just a completely passive printed mark. On the other hand, a bar code system includes a means of interpretation [algorithm] as well as interrogation [reading/scanning]. Neither of these are specified in the Newsletter, but both must have been included in your study. There is no question in my mind that one bar code system will perform better than some other when exposed to the rigors of the real world....

Third: The degrees of stress and accompanying neuroses are not indicated. What is more, even if they were indicated, they might or might not represent the real world: possible combinations and permutations go on forever....

Of course, the bottom line is: This study addresses the wrong issue! Any of the comprehensive bar codes listed have adequate error freedom. But only one is needed! As long as studies like this contribute to a fractured market, real time management will only be a dream.

[January 17, 1992 - Ackley to Burke]

Dear Harry: I too reacted to the same SCAN Newsletter article...feeling that the UPC results needed more information....I thought you would like to learn some test background....

The test originated with the health industry's question of how to capture unit dose information....The problem is that Code 39 will not fit on unit dose containers, whereas Code 49 and 16K do fit. The health industry asked if

Code 49 and 16K were as secure as HIBC Code 39....The health industry was only interested in data errors, meaning data read into a computer that was different from the data encoded in the symbol.

Using your terms, the statistics were based on the difference of correct data versus incorrect data and the degree of departure is zero. The testing used specific symbol configurations, one arbitrary type of scanner, decode algorithms which were known, and a data base that kept the scanner output, called edge counts, when an error occurred. Consequently, we could tell why an error occurred, i.e., the bar and space widths, or scanner counts, really were wrong. We cannot tell how the counts changed....

You state that, "Any of the comprehensive bar codes listed have adequate error freedom." I agree with you 100%....However, the health industry wanted more than conjecture. They wanted a demonstration of data security. Basically, the test results fully support your statement that bar codes are adequately secure, and in fact, assuming UPC is used with a data base lookup, I would say that bar codes are very secure!

[January 22, 1992 - Fales to Burke]

Dear Harry: I...appreciate and applaud your efforts to get people to understand the scope of possible usage of auto ID....If only people would listen!....

Our contractual obligation here at OU's Center for Auto ID was to conduct a test and provide final documentation of design, methodology and results....Certain parameters were predetermined and others we were allowed to control. This test had one stated purpose: are Codes 16K and Code 49 as robust and error-resistant as previously tested Codes 39, 128 and UPC; i.e., one error or less in one million data characters? The result is yes....Some very interesting questions beg to be answered. They are not, however, a part of our contractual arrangement for the project.

[January 23, 1991 - Burke to Ackley]

Dear Sprague: I do not quarrel with the conclusions reached as a consequence of the assumptions made. I merely maintain that the basic assumptions were not real world: therefore, the conclusions, as presented, cannot claim to be definitive in a real world context....If this study makes the Health Industry people happy, I suppose it has served a useful purpose. Nevertheless, the presentation of its conclusions, in the manner so far observed, does not come up to a fully succinct Engineering Discipline for the reasons indicated above.

Once more I seem to have created a tempest in a teapot. Surely, there must be some better way of spending one's time? Sincerely, but not apologetically.

[February 3, 1992 - Burke to All]

Gentlemen: All of the above documents attribute to the difficulty of the task addressed...I assume the final document will list suitable quantification in terms of print-stress and scan-neuroses.

However, I must return to my basic hypothesis that none of the barcodes included in this exercise will ever participate in a reading error unless there is a reason. Without reasons consequences are left hanging -- deserving of

question...As previously pointed out, the tests were performed on particular barcode systems not on barcodes per se. Other algorithms will doubtless reach other conclusions...

If only I were fifty years younger I know I could put it over. Where is our youth? Are all the dreams gone?

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A key player....

....in the resolution of the recent AIM International-AIM Europe dispute, was Jack Kindsvater (Zebra Technologies). As a member of the AIM US Board of Directors, Kindsvater accompanied AIM US President Ivan Jeanblanc (DH Technology) to the London meetings in February, which addressed the AIM Europe controversy. At those meetings, the two-man American delegation sat down with AIM Europe Board members to hammer out the agreement that was ultimately adopted by all of the parties at the subsequent meetings in Charleston and Amsterdam (SCAN Feb 92).

[At the important Amsterdam meeting on March 10-11, an AIM International Task Force was appointed to temporarily replace the Board of Directors. The Task Force was charged with preparing a new charter and organizational structure for AIM International to be presented to the AIM International Annual Meeting scheduled for October 1992 (at SCAN-TECH US in Anaheim). Kindsvater was appointed as one of the members of that Task Force.]

During a lengthy post-mortem interview with Kindsvater, we reviewed what had happened and we sought his opinion about how the newly revitalized AIM International organization will function.

"AIM International should be something more than a paper tiger," Kindsvater began. "It should be something more than a front by which the AIM mark is moved around. In my personal opinion, that is kind of close to what it was in the past when it was originally set up. It must be more sensitive to the needs of other countries in other parts of the world."

Kindsvater believes that the role of AIM International has become much more important as the technology has spread throughout the world and as manufacturers and resellers have sought affiliation with AIM groups. "I believe," he continued, "that we have identified three functions that AIM International can perform. The first one derives from a technical standpoint. Worldwide technical standards are becoming very important. What UCC, EAN and CEN are doing is fine as far as they go, but we need to make sure that the overriding specifications and standards are applicable around the world. That, to me, is really the number one challenge to AIM International.

"Second, we can no longer depend on individual countries or regions to develop the auto ID industry. Where there isn't enough local effort or money to bootstrap and support such a movement, AIM International would have to establish some sort of a 'strategic venture' -- possibly a venture fund -- which would identify these areas and facilitate the formation and development of an AIM operation within those countries or regions.

"Finally, it should be the role of AIM International to protect the AIM and SCAN-TECH marks, to make sure they are registered and to be certain that the organizations that use them maintain the overall AIM quality." On this last point, Kindsvater anticipates that AIM US will retain control of the AIM mark until they are comfortable with the AIM International organization and its ability to manage that mark. Kindsvater believes that this worldwide symbol is a major asset of all of the AIM organizations and that AIM International will have to "earn that responsibility."

Kindsvater acknowledged that one of the major challenges facing AIM International is that it is a totally unique organization. He knows of no other industry or technology which has undertaken to weave together an international association of companies with common identity, goals, standards and funding.

"Hopefully," he concluded, "the difficult eight weeks of battle among the AIM International, AIM Europe and AIM US organizations may turn out to have produced very positive results for the future."

To maintain the continuity....

....of an exhibition and conference in Germany -- where SCAN-TECH Europe had been held during the past two years -- SCAN-TECH Germany 92 is scheduled for April 28-29, 1992 in Munich. It will be the first "national" show in that country; i.e. the conference will be organized locally and will be conducted only in German.

This year, SCAN-TECH Europe 92 will be held in Paris on November 3-5. More than 70% of the exhibition space has already been sold, including more Japanese companies than ever before. Last year, in Dusseldorf, there was some concern that the increases in both the size of the exhibition area and the number of visitors lagged behind the actual growth of the European auto ID market.

The expectations are that the Paris venue for 1992 will attract a new group of exhibitors and visitors in addition to those who have attended before. The planning group at AIM France is exerting every effort to make this the most successful SCAN-TECH Europe ever.

In its reply to the legal action....

....taken against RJS by Zebra Technologies last month (SCAN March 92) -- alleging trademark and copyright infringement, etc. -- RJS issued a formal reply which "categorically denies that it has in any way copied...any Zebra copyrighted software."

The RJS statement continued: "It is the policy of RJS to properly acknowledge other companies' trademarks....[If not,] such failure was inadvertent and sporadic." RJS says it intends to vigorously contest any charges by Zebra.

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