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An important supply and license agreement....

....was signed by Symbol Technologies and Intermec on April 3, 1990. This contract has the preliminary earmarks of being a good one for both companies.

Under the agreement, Symbol grants Intermec licenses to manufacture hand-held laser scanners (for use other than in retail point-of-sale) under 25 of Symbol's laser scanning patents and patent applications. This comprehensive license will be at a fixed royalty rate of 15% and calls for Intermec to pay a minimum of $21.2 million in fees over the 6-year life of the contract. [Note that the $21.2 million in royalties, at the 15% license fee, translates to more than $140 million in Intermec sales of this product over the next 6 years.].

In addition, Intermec has agreed to purchase a minimum of $28.0 million of advanced scanning products from Symbol, including their long-range and high density scanners.

Why does this appear to be an agreement that will benefit both companies?

For Symbol:

- It locks in one of their most important OEM customers.
- It provides substantial guaranteed sales in a market area (manufacturing/wholesaling/transportation) that Symbol has not strongly developed for itself.
- It yields a very respectable royalty. (The 15% rate, according to Symbol's President, Ray Martino, "protects our bottom-line profits.")
- It adds another important company to the roster of those who acknowledge Symbol's patents.

For Intermec:

- The agreement permits corporate control of the design and manufacture of this important product in their line.
- It allows Intermec to share in any new product developments from Symbol, the acknowledged leader in this product group.

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INCLUDING THE INTERNATIONAL EDITION

- It will provide better eventual profit margins when production gets ramped up to sufficient levels of quantity and efficiency. (In this regard, Intermec's President, John Paxton states: "This agreement will have the immediate effect of nearly doubling the gross margins on our hand-held laser scanners.")

- It absorbs a portion of Intermec's manufacturing overhead as the company moves into its new manufacturing facilities.

- Although Intermec will not be allowed, under the agreement, to manufacture laser guns for retail POS sales, the company can continue selling to this market so long as the scanners are purchased from Symbol.

- It protects Intermec from costly patent lawsuits and, according to Paxton: "It's cheaper to design a product under license, than to have to design around a patent."

Not yet finalized is an additional agreement which will provide for Symbol to have access to Intermec's patents in printer technology and to purchase Intermec printer products.

In an expanded follow-up interview, Paxton was very enthusiastic about how the new agreement with Symbol will affect Intermec's performance. "From a technology exchange standpoint," he said, "it enables the two industry leaders working together to deliver improved products to their customers." As for how quickly Intermec will be able to take advantage of this opportunity to manufacture laser guns, he explained: "Product design has been completed. We will be on line in our first quarter, expect to start shipping product during the second quarter and anticipate a major improvement in our bottom line profitability by the third quarter of this fiscal year." [Intermec's fiscal year runs from April 1 to March 30.]

One last point about the licensing of Symbol's technology. [Spectra Physics, by the way, is the only other Symbol licensee (*SCAN* Mar 89).] Although rumors were floating about recently that NCR was also pursuing a Symbol license for their hand-held scanners, no one is commenting for the record at this time. NCR introduced their omnidirectional unit a few weeks ago at the Quick Response meeting in Dallas (*SCAN* Mar 90) and it is still too early to draw any conclusions as to customer response.

While following up....

....on the Symbol-Intermec story, we picked up a few other nuggets of information worth noting.

At the end of March, Intermec's Board of Directors decided that the company should go into the open market and purchase up to one million shares of its common stock, about 12% of the 8.5 million shares outstanding. With the stock trading at about $18 -- after reaching as high as $34 within the last 6 months -- the Board believes the current price is "an extremely attractive investment." It is presumed that the company expects that this demonstration of support of its own stock, coupled with the reduction in the number of shares available, will increase the trading price.

The Symbol suit against Opticon for patent infringement is still in limbo. The court seems to think that 6 months (since the last papers were filed) is about how long these decisions should take. Based on that criteria, the clock would have started running last October and the outcome should be available soon.

Symbol's new product group, the LRT 3800 -- based on spread spectrum RF technology (*SCAN* Feb 90) -- is still viewed as very important to the company's future expansion. However, any notion that these systems would be sold in sufficient quantity to help increase sales and earnings this year have been discounted. As with any major new development, product refinements are still under way, and customers are evaluating the equipment. Those users who do choose to try the LRT 3800 will beta test in one or two installations before committing to all stores or locations.

Interestingly, Symbol is also recognizing that the more traditional narrow band approach to RF identification and communications will continue as an important market segment. There are many retail and warehouse sites where the number and accessibility of the remote stations do not warrant the spread spectrum type of communication system.

The final bit of news is that Symbol has gone public with more details of its new mega-density bar code - PDF-417 -- which we first disclosed 6 months ago (*SCAN* Nov 89). We will have more information of where this new "portable database" concept is headed in a later issue.

In what may turn out to be....

....a significant breakthrough in the development of lasers that can be used for bar code scanning, Philips Research Laboratories in Eindhoven, The Netherlands, has announced a semiconductor laser which operates at a wavelength of 633 nanometers (nm).

This is exactly the same wavelength as that of the helium-neon gas lasers originally used on all laser scanners and still used in counter-top scanners of the type produced by Spectra Physics and others.

For hand-held devices, he-ne lasers have been mostly replaced by the Japanese-made, solid-state, visible laser diodes which are in the 670-680 nm range and which emit light at the dark red end of the visible spectrum. At 633 nm, the new Philips experimental units are clearly visible to the human eye. According to Philips: "Previously, this wavelength could not be achieved with semiconductor lasers for practical use, since it resulted in excessive losses in the material. Philips has succeeded in reducing these losses to such an extent that a semiconductor laser is feasible with a wavelength of 633 nm."

The company further describes the advantages of these new lasers as follows:
• Very small dimension, with laser length reduced from 300 mm (for he-ne lasers) to 0.3 mm. • Ability to operate at temperatures as high as 50 degrees C (122 degrees F). • High operational safety. • High efficiency, needing only simple battery power. • Production based on familiar semiconductor technologies.

The company cautions that these announced results "relate only to laboratory research; they do not imply the manufacture or marketing of new products."

COMMENT

Although it may be some time (if ever) before these units go into production, they could be of particular significance in UPC/EAN scanning in supermarkets, where many bar codes are printed in colors other than black on white. The current semiconductor lasers, operating at 670-680 nm, have not been successful with food retailers because of their inability to scan these other colors. Philips has not yet decided whether to manufacture this product themselves or license it to others -- such as the Japanese, who have already established production plants using the same manufacturing technology. We have learned, however, that test models will be sent to prospective buyers this summer.

Dr. Gerard Acket, Philips Research Laboratory, Eindhoven, The Netherlands; Telephone 40 757189; FAX 40 757319.

The very informative....

....*ANA News*, published monthly by the United Kingdom's Article Number Association, carried a provocative article in its February, 1990 issue. Titled, "Getting the facts right about FACT," the piece opens with the following statement:

> "The objective of establishing 'international cooperation among organizations to foster the most widespread acceptance of commonly accepted definitions for data identifiers' is indeed a noble one. It echoes EAN's aim to establish a common language for business worldwide."

The article goes on to describe the FACT data identifiers which are 1-character to 4-character prefixes, structured to allow codes representing different types of data to coexist without duplication.

[A brief update on FACT. The US-based Federation of Automated Coding Technologies was formed in the mid-1980's. With the membership restricted to trade organizations which, in turn, represent thousands of companies, its charter was to monitor activities in the auto ID industry from the user perspective (SCAN Dec 87, Mar 88).

In 1988, FACT undertook the administration of data identifier prefixes as its primary project. DI's were originally conceived by the Automotive Industry Action Group (AIAG) for the major automobile manufacturers and their suppliers. It allowed the various data elements in a multi-field shipping label to be distinguished from one another (i.e. Part Number, Serial Number, Quantity, Vendor, etc.).

The DI concept answered the need of many of the US industries. The resulting DI Dictionary has been expanded to cover literally hundreds of different data designations, some generic to all industries, others assigned to cover specific categories for one group of businesses. DIs can precede data strings of any length or structure. They are the antithesis of the UPC/EAN concept which is based on rigidly structured codes and symbols.]

The writer of the *ANA News* essay then proceeded -- presumably with the full knowledge and consent of ANA's Executive Director, Andrew Osborne -- to take serious issue with the FACT approach, as evidenced by these excerpts:

> "What FACT does is at best legitimize and at worst encourage proliferation of coding conventions. The way to create sense from the web of inter-industry trading interfaces is to harmonise coding systems, not to document their fragmentation.
>
> "For a user to attempt to build systems around literally hundreds of FACT data identifiers would be a monumental and unnecessary task. A good standard needs to be simple and based on clear, firm rules...These are the criteria upon which EAN is based, but which are obviously lacking from FACT...."

The US Uniform Code Council position, up to now, has been to recognize that FACT's data identifiers have their proper place in certain industries. In spite of this, however, UCC has not altered its plans to retain its own structured systems for item and shipping container coding, along with special supplementary codes to handle such additional data as lot and batch numbers, dating and other information. UCC has also adhered to its policy of only working with specific symbologies that it has extensively tested -- which now include UPC, Interleaved 2/5 and Code 128 -- and which have been accepted by the retail industry.

The live-and-let-live attitude of the US group toward FACT DI's, however, is not shared by the International Article Numbering Association/EAN, as was forcefully expressed in the *ANA News* article. Whereas the UCC realizes that some industries may be forced to choose one system or the other -- or even both -- EAN rejects the data identifiers, maintaining they will cause unnecessary confusion.

Will FACT's data identifiers take hold in Europe? They seem to be proliferating in the US, where many industries have already followed the lead of the AIAG. The problems with UPC/EAN vs. FACT seem to surface particularly with the multi-coded labels for shipping cartons. The UPC/EAN system is simply not yet prepared to distinguish among the literally hundreds of data classifications available for companies to place on their shippers.

> [This conflict within the EAN territory was illustrated by the standards adopted by Eugropa, the European trade association of paper wholesalers (*SCAN* May 89). Eugropa adopted EAN bar coding for source marking all paper products, including those consumed by the print industry. Eugropa required a pallet label, similar to the AIAG label, but specific to the paper industry. Since EAN could not meet this challenge of distinguishing among the various codes on their multifield label, Eugropa negotiated with FACT to obtain the relevant data identifiers (all of which are now available for use by other industries).]

UCC believes that harmonization can prevail between the two systems in the US. EAN looks at 47 member countries and concludes that a rigidly-structured, fully-tested, single alternative is the only correct way to go -- and at the same time, it also seeks to protect and strengthen its position as the premier coding organization in the world. The ultimate decisions reached in this dispute will have far-reaching consequences throughout the auto ID world.

We have long been an admirer....

....of a special social project, started a few years ago by New York philanthropist, Eugene Lang, which initiated an innovative idea to help underprivileged youngsters. According to an article in the Sunday Business Section of *The New York Times* (1/14/90): "Lang struck an imaginative deal with a class of Harlem 6th graders: If they finished high school, he would pay their college expenses. The idea, which has been widely copied, brought Mr. Lang national celebrity."

According to the same *Times* article, however: "Mr. Lang's for-profit company, the Refac Technology Development Corporation, is far less famous, and is drawing far less favorable reviews from some quarters. Based in New York City, Refac promotes itself as a 'white knight' for small-time inventors who lack the resources to fight their own legal battles."

We have often written about Refac (*SCAN* Aug 87, Oct 88, June 89) because of the company's involvement with the Jerome Lemelson patents which are presumably related to bar code scanning. Refac has instituted legal action against a number of auto ID companies, but none of these suits have come to trial as yet.

Some firms in the bar code scanning industry have already signed up with Refac/Lemelson rather than test the patents in the Courts. The *Times* article specifically addressed this type of action; i.e. of auto ID companies signing up with Refac to pay royalties on patents never tested legally and deemed unenforceable by every study we've seen that was conducted by independent patent attorneys. *Times* columnist Edmund Andrews wrote: "Critics angrily charge that the company makes millions of dollars through 'patent blackmail' and the cheeky manipulation of weaknesses in the legal system."

The article explains that Refac has filed patent infringement suits against 2,000 companies so far, with threats pending against 1,000 more firms -- including IBM, Eastman Kodak, R.H. Macy, Sears and Radio Shack. The *Times* quotes critics as saying: "The company merely acquires obscure patents that have little real value and do not hold up in Court and uses them as weapons to create enough fear and confusion to force settlements."

According to the *Times*, the company has yet to win any Court cases -- and, in fact, has had several cases thrown out on summary judgments -- yet it has successfully built an annual volume in excess of $13 million, with a 25% after-tax profit margin.

We have come back to this subject because of two recent bits of news. First, there is the story about Jerome Lemelson -- the prolific inventor of the bar code related patents which were acquired by Refac and which Lang's company has been pursuing in the automatic identification industry. In November, 1989, Lemelson won an award of $25 million in his suit against Mattel over its line of Hot Wheel toys (a case totally unrelated to the bar code patents). The victory made national news as an example of how independent inventors can prevail over large corporations.

The other story is the sudden death (in an automobile accident) of Refac's VP, Philip Sperber, who was the architect of Refac's aggressive tactics. To put Sperber's -- and, therefore, Refac's -- tactics in perspective, we will quote from a series of articles he wrote in *Les Nouvelles*, the Journal of the Licensing Executive Society:

"It only makes sense to view the cost of litigation as bargaining leverage to force a settlement on terms favorable to the party that can litigate the matter to death without worrying about the cash flow."

"If patent validity or infringement is questionable, why take a chance with an arbitration expert who will know exactly how weak the patent is and how dubious infringement is? It makes sense to take one's chances with a Judge inexperienced in the technical and legal aspects involved."

"Retailers and users sued for patent infringement frequently establish a policy of buying only from suppliers licensed by the patent holder. This results in manufacturers, importers and foreign exporters voluntarily asking for a license."

For those companies who have been notified by Refac of patent infringement relating to the bar code patents, we suggest that those statements be factored into the final decision on how to proceed.

With the addition of 14 new members....

....at its March meeting, AIM/US has increased its membership to 148. The significance of these new members is not just the quantity (this was the largest number elected at one sitting in 4 years), but their diversity in the expanding technology of automatic identification:

AT&T Information Products (Mahwah, NJ) -- Bar coding and software equipment, including ink jet coding and labeling, thermal transfer labels, inks and ribbons.

Applied Tactical Systems of Washington (Seattle, WA) -- Integrators of bar code systems.

Digital Equipment (Northboro, MA) -- Systems integration, networks, and computer systems and services.

General Farebox (Elk Grove Village, IL) -- Magnetic stripe equipment and systems for the transit industry.

Gentry Associates (Orlando, FL) -- Bar coding and software equipment and integration services.

Intelligent Controls (Lynnwood, WA) -- Bar coding and software equipment, bar code access control systems, plastic cards, lamination and photo ID equipment, dot matrix printers, and OEM bar code readers.

Nitto Denko Technical (Santa Clara, CA) -- Bar coding and systems integration equipment.

Product Identification & Processing Systems (New York, NY) -- Bar code labels and film masters, and bar code equipment.

Scantron (Tustin, CA) -- Bar coding, machine vision, optical mark readers, optical character recognition, design forms and software equipment.

Softstrip (Waterbury, CT) -- High-density, two-dimensional bar code and optical scanners.

Superior Machine Systems (Cincinnati, OH) -- Bar coding, applicator and software equipment, labeling equipment and custom programmers and integrators.

Texas Instruments (Attleboro, MA) -- Radio frequency registration and identification systems.

United States Data (Richardson, TX) -- Bar code label printing and software for automated factory control and monitoring.

Vocollect (Pittsburgh, PA) -- Portable voice data collection terminals.

[AIM keeps reminding us that SCAN-TECH 90 will be held October 2-4 in Atlanta.]

A significant education initiative....

....leading to a full course of study in automatic identification at the college level, has been developed in the United Kingdom as a unique, joint undertaking of the University of Keele and AIM/UK. The project will be funded by the British Government under a program called "technology transfer."

The plan will evolve over the next two years as four separate efforts:

1. A seminar program, titled "Auto ID for Quality Improvement and Competitive Advantage," targeting industry executives.

2. A three-day industrial training course, based upon the AIM/Europe Basic Training Course, which is likely to run as a parallel session at SCAN-TECH UK '90.

3. An Educational Awareness Initiative, which will set out to integrate auto ID into established university courses such as electronic, mechanical and manufacturing engineering, as well as information technology and business administration.

4. A Master of Science degree in Automatic Identification (planned for 1991) to include full courses of study in the various auto ID disciplines.

As a trade organization, AIM/UK's involvement will be to provide equipment (on loan from member companies), to assist with course material, to furnish speakers and, very significantly, to open up employment opportunities for students and graduates of the Master of Science courses.

This plan is the most ambitious auto ID educational effort we have seen to date and elevates the technology to an important stature at the university level. For more information, contact: AIM-UK, Old Vicarage, Haley Hall, Halifax, W. Yorkshire HX3 6DR England; or Dr. Tony Furness, Technology Transfer Office, Stafford Design & Technology Centre, Keele University Science Park, Keele, Staffordshire, ST5 5SP, England.

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