

Small businesses a medium for high technology advance

2 Rome firms making mark in research

By DAVE GYMBURCH
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A device that measures air turbulence from the ground — instead of using costly rockets and balloons — may someday trace its inception to Dove Electronics Inc. in Rome.

Meanwhile, computers that can analyze and store data from newspaper articles, legal papers and other non-computer formats may emerge through Knowledge Systems Concepts Inc., also in Rome.

These firms are among local companies developing products with the help of money awarded in the past two years from the Small Business Innovation Research Program.

In both cases, the companies still have a way to go before they are ready to explore commercial uses for the SBIR projects. As small firms that primarily deal in defense contracts, they also recognize they cannot plunge rashly into such ventures.

"If we can determine an area that will pay off, a product that will have a good market, it would be an incentive to pursue that," said Jerald Plante, president of Knowledge Systems Concepts. "It can turn out to be a very lucrative endeavor. But it can be risky, and a small company has to be very cautious."

John Dove, owner of Dove Electronics, said the Small Business Administration proposal for turbulence research "happened to be in an area we're interested in working in. That's the reason we decided to go in on it."

Here is the status of some local SBIR projects funded since the 1987 federal fiscal year:

● **Dove Electronics** — The company received a \$30,000 award in the 1988 fiscal

year for a feasibility study on "Holographic Optical Element Spatial Filters," the air turbulence measuring project. It recently received a \$200,000 award for building two prototypes. The awards are from the Department of Commerce, through the National Oceanographic and Atmospheric Agency.

The project uses lasers and other special equipment on the ground to measure transmission changes that indicate turbulence. Its commercial applications could include uses by airports and airlines to check wind speeds and pockets, and advise planes of conditions before takeoffs. It also could be used to combat pollution, by calculating the path of wind-blown air pollutants. Dove said "the beauty of it" is it would be ground-based, and significantly less expensive than airborne devices used now.

The two prototypes should be finished within two years. The project then could go to a third phase, not funded through SBIR, in which the company would develop commercial uses with financial help from agencies and businesses as potential users.



John Dove, owner of Dove Electronics in Rome, shows some holograms on a table at his office. Holograms are involved in his project under the Small Business Innovation Research program.

● **Dove Electronics**, about five years old, works in research and development engineering for communications areas, including computer networks and data bases. It has eight employees, and mainly handles defense contracts although it also has some private-sector work for Eastman-Kodak and Corning.

● **Knowledge Systems Concepts** — It received a \$49,816 award from the Air Force in fiscal 1987 to study feasibility for "Application of Modern Mathematics to Theatre Air Warfare Intelligence." Last September it received a \$450,000 award to develop technology for the project, which investigates using artificial intelligence computer techniques to analyze uncertainties.

For the Air Force, this involves systems to digest such information as terrain, troop strength and location, and help select military targets. Its commercial application could involve analyzing financial data and other projections for businesses.

For a second SBIR project, the company last month received a \$45,000 award from the Air Force to check feasibility of "Natural Language Understanding," for computers to interpret information from non-computer formats. Applications could include analyzing stocks, market strategies, and local manufacturers.

Knowledge Systems Concepts, about seven years old, works in applying advanced computer technologies to defense problems. It employs about 30.

● **Microfoam, Inc.** — This Chadwicks company, a maker of ink rolls and pads for various printing uses, underwrote an SBIR award application on behalf

of Utica College chemistry professor Dr. Lawrence Cerny, for researching a blood substitute. The Army granted a fiscal 1987 award of \$41,250. Cerny said one of the company's former owners, Ray Williams, supported the research as possibly leading to a new branch for the business.

Since its initial feasibility stage, the project has gone in a different direction. An SBIR award was not approved for the second stage to develop technology. Cerny, working part-time with Masonic Medical Research Laboratory, has applied for a National Institute of Health research grant. SBIR no longer is involved.

Microfoam, meanwhile, was sold last March to Porelon Inc. of Cookeville, Tenn. It is not involved in any other SBIR projects. It has about 35 employees, making ink rolls and pads whose uses include desktop calculators, cash registers and grocery store label guns, said Vice President and General Manager Larry Ragland. The parent Porelon firm is in a similar field and is part of Johnson Worldwide Associates.

Besides the above businesses, another local SBIR connection comes from Rome Air Development Center, which is among federal agencies that review projects and determine awards. It has issued awards to Knowledge Systems Concepts, among many firms nationwide, said Richard Smith, deputy for small business at RADC.

With less than two months remaining in this fiscal year, RADC has awarded \$1.85 million in SBIR contracts. In fiscal 1988, it awarded just over \$2 million, Smith said.