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STATEMENT OF

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U. S. DEPARTMENT OF COMMERCE

BEFORE THE
SUBCOMMITTEE ON ~~GENERAL OVERSIGHT AND THE ECONOMY~~ Patents
OF THE
~~HOUSE COMMITTEE ON SMALL BUSINESS~~ Senate Judiciary Committee
~~MAY 15, 1986~~
Feb. 17, 1987

Mr. Chairman and Members of the Subcommittee

The Department of Commerce was pleased to receive your invitation to appear before this Subcommittee to discuss the Small Business Innovation Research (SBIR) program. I am accompanied by Mr. Edward Tiernan, Chief, Office of Research and Technology Applications, National Oceanic and Atmospheric Administration (NOAA), who is assigned to manage the SBIR program in the Department.

In 1842, after five-years of pursuing Congress, Samuel B. Morse was granted $30,000 to test the feasibility of bringing his concepts on telegraphy into practical application. The grant allowed Mr. Morse to build a test telegraph line between Baltimore and Washington. No conditions or unnecessary regulatory control were imposed that would impede commercial application of the results. This telegraph served as the prototype and incentive for the investment of capital to construct a nationwide network of lines under patent licenses from the inventor.

Notwithstanding the demonstrated opportunities to the Nation created by the grant to Mr. Morse, the government did not create a program to provide similar grants of seed capital until the enactment of the SBIR program in 1982.

As you know, the primary purpose of the SBIR program is to set aside a small portion of the research and development funds appropriated to Federal agencies to the funding of high-risk technology developed by small businesses which is potentially useful both in the commercial marketplace and the funding agency. The execution and impact of this program is of great importance to Commerce not only as an agency R&D sponsor but in our broader role of creating incentives and removing barriers to swift introduction of new U. S. products and processes into the commercial marketplace.

There is a growing understanding that the commercial marketplace is now global and the health of the United States economy can no longer be addressed in isolation. In this context one foreign competitor after another has learned that control of a new technology results in control of the marketplace even beyond the parameters of the technology. Foreign competitors have already become the primary suppliers of new technologies which have displaced older technologies previously supplied by the United States.

Notwithstanding losses of these markets and jobs we are not standing still. While small businesses are languishing in many parts of the world--where high technology small businesses are virtually unknown--the United States is experiencing a small

business explosion. We are creating hundreds of thousands of new small businesses a year. About 10% of these are high technology companies which then create 5-15 support jobs in other companies. Economic value from such support functions constitute approximately 50% of our GNP where they serve as a stabilizing flywheel. SBIR is an important part of this equation because these start-up high technology companies are most vulnerable when their discoveries are still being developed and risk capital is hard to find.

There is an urgent need to maintain and enhance this progressive climate for innovation in order to cope with the massive global changes in process. President Reagan recognized this when he signed the SBIR program into law. He said:

> "Small business is a tonic for what ails this country. By passing and signing this act, we're showing our resolve to unleash this most innovative sector. The Small Business Innovation Development Act recognizes that we in government must work in partnership with small business to ensure that technologies and processes are readily transferred to commercial applications."

It is important to keep in mind why the SBIR program continues to command wide spread support:

> First, outside of the government's basic research programs, most R&D programs cannot easily address and support a private sector technology solution to an agency problem unless it had been specifically budgeted,

Second, the program has successfully developed as required by Congress a "simplified standardized funding process" in response to the inability of small innovators and entrepreneurs to work within burdensome and inconsistent regulatory theories and,

Last, Congress required that agencies permit the awardee to retain ownership of the ideas proposed to the agency. It is the patentable, copyrightable or technical data results that awardees own and license to third party developers and investors that act as the incentive to further private sector funding and commercialization.

Outside the template created by Congress for the SBIR program, these principles cannot be reproduced without further legislative and regulatory reform. In fact the principles of the SBIR program have become the model that other programs are attempting to emulate. For instance:

1) In February 1983, President Reagan directed all Federal agencies, to the extent permitted by law, to apply the same patent policies applied to the SBIR program to all other contractors not so treated; and

2) A number of state governments have initiated their own SBIR programs. Some states encourage applicants to apply for Federal SBIR awards in conjunction with local programs thereby enhancing the prospects of successful commercial applications in the local economy.

I would like to conclude by giving a brief oversight of our management of the SBIR program within the Department.

Commerce conducts its program through a working group consisting of one member from each agency contributing to SBIR program funding. The working group selects topics for the solicitation, arranges for the review and evaluation of proposals, and selects the winning proposals. Each Phase I proposal receives at least two independent reviews by DOC scientists and engineers and Phase II proposals at least three, one of which must be by an external reviewer. Selection is based upon scientific and technical merit, relative importance to DOC, program balance, and commercial potential. These procedures are working well and producing results that have the potential of meeting our research needs and the objectives of the SBIR program. In this regard, the convergence of agency research needs and program objectives, the subcommittee may be interested in knowing that the ranking of our Phase II proposals, based upon scientific and technical merit and DOC need, exactly matched the level of third party funding commitments that were received after the rankings were made. The highest ranked proposals received the highest level of third party funding commitments. This fact made the selection quite straight forward.

The Department's program was initiated in 1984, when, for the first time, the extramural R&D budget exceeded the $100,000,000 threshold for participation. Our extramural R&D budget for FY 84 was $103,907,000 and at the 0.2% level for the first year the reallocation was $208,000; our SBIR program, in

terms of funding is small -- very small when compared to other departments. However, our research programs cover a broad spectrum of disciplines in the environmental sciences in the National Oceanic and Atmospheric Administration, physical measurement sciences in the National Bureau of Standards, and statistical methods in the Bureau of the Census. To provide an opportunity for a correspondingly broad spectrum of small business research capability we set the maximum funding limits at a relatively low $30,000 for Phase I and $200,000 for Phase II.

The first Department of Commerce SBIR program solicitation was released on October 15, 1984. Over 3,000 copies were provided to small businesses. That solicitation included research topics of interest to NOAA in the atmospheric and hydrological sciences, ocean science and engineering, living marine resources, space and surface based remote sensing, and applications of environmental data. In response, we received 154 proposals and seven awards were made totaling $204,000. At least one proposal in each of the research topics mentioned received an award and all seven submitted Phase II proposals. Three Phase II proposals were selected with follow-on funding commitments totaling over $1,000,000.

The second Department of Commerce SBIR program solicitation was released on October 15, 1985; this time including research topics of interest to the National Bureau of Standards and the Bureau of the Census as well as NOAA. In response, 184 Phase I proposals were submitted and 10 were awarded contracts.

Mr. Chairman, the Department's program is two years old and we only recently made our first Phase II awards. Therefore, assessment of the program, based on the quality of research done and its impact on our research programs would be premature. However, if we were to assess the program based upon the quality of proposals we have received and the feasibility studies completed in Phase I, it is quite clear that the SBIR program has the potential of making a significant contribution to our R&D efforts. Further, third party interest in the technologies that may emerge from Phase II, as expressed in follow-on funding commitments, suggest that these technologies would indeed have commercial value.

Finally, we have had no significant problems in implementing the program. Public Law 97-219 is clear with clearly stated objectives and requirements. The policy guidance and program coordination provided by the Small Business Administration has been equally clear and helpful.

We thank you for the opportunity to provide testimony in the Department's program and hope it will be helpful in the subcommittee.