

Microelectronics Research and Development

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Foreword

Microelectronics, the fundamental building block of today's pervasive information technologies, has progressed at a tremendous rate over the last few decades and has become a vital part of U.S. commerce and defense. This fast-changing field depends critically on aggressive research and development (R&D) programs. Federal participation in microelectronics R&D is twofold: the government directly funds a significant fraction of the activities, and several Federal policies indirectly affect private support of R&D. Hence, Congress has a major role to play in microelectronics R&D—a role that can be illuminated by a better understanding of today's activities in this area.

In November 1984, the House Committee on Science and Technology asked OTA to prepare a background paper on microelectronics R&D as a follow-on to the OTA assessment of *Information Technology R&D: Critical Trends and Issues*, released in February 1985. This background paper describes the current state of research and development in microelectronics by examining the range of R&D efforts and the sources of Federal and private support for R&D. It also presents potential policy concerns that stem from existing arrangements for direct Federal support and from changes underway in microelectronics R&D.

Many members of the diverse microelectronics community, spanning the spectrum from basic research to applied development, contributed their knowledge, insight, and viewpoints to this background paper. These included scientists, engineers, managers, and observers in Federal agencies and laboratories, industry, universities, and other organizations. OTA is pleased to thank all participants for their assistance. However, OTA assumes full responsibility for the contents of this study.

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