

**SUPPORTING STATEMENT
U.S. Department of Commerce
Bureau of Industry and Security**

**Defense Industrial Base Assessment:
U.S. Integrated Circuits Design and Fabrication Capability
OMB Control No. 0694-0119**

A. Justification

1. Explain the circumstances that make the collection of information necessary.

The Bureau of Industry and Security's Office of Technology Evaluation (OTE) is conducting an industrial base survey and assessment of the U.S. integrated circuit (IC) design and fabrication industrial base. This study is being conducted at the request of the Commerce Department's International Trade Administration (ITA) and will update a similar OTE survey and assessment released in 2009.

The principal goal of this effort is to gain a better understanding of the current capabilities of U.S.-located companies engaged in (1) the design and manufacture of integrated circuits and other IC-related products; and (2) the manufacture of associated production equipment and materials. ITA requested that OTE perform this study in order to update the 2009 report and provide additional information not addressed in the 2009 study. This information is needed to help inform ongoing U.S. Government reviews of industrial and trade policies affecting the U.S. semiconductor manufacturing industry.

The mission of ITA's Office of Health and Information Technologies (OHIT) is to monitor the U.S. semiconductor industry; however, OHIT lacks detailed information on the specific manufacturing capabilities of U.S. semiconductor producers and their equipment suppliers. Consequently, this comprehensive assessment will provide vital, new information to ITA, the Department of Defense, and other federal agencies in order to inform U.S. Government decision making.

More specifically, the resulting survey-based database will allow OTE to benchmark industry performance, identify key sole source dependencies and interdependencies within the supply chain network, as well as raise awareness of diminishing domestic manufacturing capabilities.

Through this BIS assessment ITA and other U.S. Government stakeholders will be better able to identify technologies, products, and services deemed essential to integrated circuit design and fabrication while also detect vulnerabilities among participant suppliers. Over the longer term, the U.S. Government will be better equipped to develop targeted planning and acquisition strategies to both (1) ensure the availability of critical integrate circuit design and fabrication capabilities and (2) ensure the health and competitiveness of the affiliated semiconductor supply chain network.

During its design and development of the survey instrument, OTE conducted site visits; gathered inputs from industry, academia, and the U.S. Government; and later field tested the draft instrument with both companies and government experts. Among them were the Defense Microelectronics Activity (DMEA), the Semiconductor Industry Association (SIA), and select IC industry leaders operating design and fabrication facilities domestically.

OTE has authority under Section 705 of the Defense Production Act of 1950 (DPA) and Executive Order 13603 to conduct assessments and collect information in support of the U.S. industrial base. These assessments are normally undertaken in partnership with the U.S. Department of Defense or with other U.S. federal agencies and typically focus on manufacturing capability, workforce, financial performance, and economic issues affecting key industrial sectors or critical technologies.

The enclosed survey questionnaire, which covers a four-year period, is the primary source of information needed for a defense industrial base assessment of this type.

By virtue of the above mentioned statute and executive order, OTE is the focal point for industrial base and critical technology analyses among civilian federal agencies, which includes mandatory data collection authority to carry out these responsibilities. OTE has conducted nearly 60 surveys and assessments of this kind in the past 27 years under various defense industrial base programs. These studies review in detail those industries with challenges relating to employment/STEM, international competition and trade, financial performance, production, supply chain, investment, foreign sourcing and dependencies, and other factors influencing their ability to support end-users such as defense and national security programs. This survey instrument is designed to collect information that facilitates such in-depth analysis.

2. Explain how, by whom, how frequently, and for what purpose the information will be used. If the information collected will be disseminated to the public or used to support information that will be disseminated to the public, then explain how the collection complies with all applicable Information Quality Guidelines.

OTE intends to survey approximately 400 companies representing a substantial portion of the integrated circuit design and fabrication industrial base.

The survey is a one-time only request. Quantitative data obtained from the survey responses will be compiled into a database for analysis, with publication consisting only of aggregate, nonproprietary results with no business confidential information. This data is needed to assess the status of IC design and fabrication companies and identify specific issues and challenges facing industry. Qualitative questions are used in some limited cases to complement the statistical data. Through analysis of the aggregated survey results, the overall goal is to enable Congress, Executive Branch agencies, and industry to better monitor trends, benchmark industry performance, and raise awareness of potential IC sector vulnerabilities which could adversely influence military-related production, defense readiness, and the warfighter.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological techniques or other forms of information technology.

To lessen the burden on respondents, OTE is asking firms to provide electronic submissions. Each respondent will receive a personalized letter and overview fact sheet which outline the requirements of the study and scope of information required. The letter will contain directions to the dedicated U.S. Department of Commerce portal where the respondent can gain access to the Excel survey instrument and corresponding PDF materials. This approach was used successfully for the 2015 Critical Facilities, 2015 Printed Circuit Board, and 2016 Textiles, Apparel, and Footwear surveys. All three survey instruments were reviewed and approved by OMB.

The statistical information requested in the survey tracks closely with categories adopted in the industry and verified by field tests. Almost all responding companies will have the necessary information stored electronically and will be able to retrieve it in the form requested. Other limited questions will require thought and perhaps discussion among several individuals for proper responses. These particular questions do not lend themselves to computer automation. However, such questions only require brief responses in the text boxes provided.

4. Describe efforts to identify duplication.

The information sought in the survey is unique and not available from any other source, either public or private. Some of the basic corporate data requested by OTE is submitted by companies to the U.S. Census Bureau. However, the Census Bureau is precluded by law from releasing information on specific companies and organizations.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

The integrated circuit design and fabrication sector is comprised of medium and large companies, primarily; however the survey will be distributed to a selection of small businesses. The survey instrument was designed to minimize the burden on all respondents. If for any reason the respondent cannot complete the survey in Excel format, OTE will work closely with the respondent to facilitate an alternate form of survey submission. Based on previous survey instruments, OTE expect almost all companies to respond electronically.

6. Describe the consequences to the Federal program or policy activities if the collection is not conducted or is conducted less frequently.

For the assessment of U.S. integrated circuit design and fabrication capability, a survey is the only method available for OTE to carry out its responsibilities under the Defense Production Act and Executive Order 13603. Without the survey instrument, OTE could not obtain company specific information on: integrated circuit (IC) design specifications, wafer starts and mask

production, packaging, mergers and acquisition, financial performance, workforce, cyber incidents, investments in research and development, and future challenges, among other topic areas. The resulting database will allow OTE to benchmark industry performance, identify dependencies and interdependencies within the supply chain network, as well as raise awareness of diminishing manufacturing capabilities.

This method of collection will allow the International Trade Administration, the Defense Department, other U.S. Government agencies, and industry stakeholders to more accurately monitor trends and benchmark sector performance. If not studied in such detail, such supply chain network deficiencies as reduced IC design and fabrication capability and/or sole source supplier relationships could jeopardize U.S. military capabilities.

7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines.

There are no special circumstances that will result in the collection of information in a manner inconsistent with the guidelines of 5 CFR 1320.6. Survey response information will contain business confidential information which will be protected by the U.S. Department of Commerce, Bureau of Industry and Security, consistent with OMB guidelines and 15 CFR Part 702.

8. Provide information of the PRA Federal Register notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

The Federal Register notice is not applicable to this collection because it falls within the scope of the BIS generic authority entitled, “National Security and Critical Technology Assessments of the U.S. Industrial Base,” as approved under OMB Control No. 0694-0119. This authority is renewed by OMB every three years (last in 2016) to support ongoing BIS industrial base assessment needs.

OTE personnel developed the survey in consultation with government and industry experts over a period of several months. The following is a list of select individuals who provided input:

Government

Gerald M. Borsuk, Naval Research Laboratory, 202-767-3525
Sydney Pope, U.S. Department of Defense, 571-372-6481

Industry

Dan Deisz, Rochester Electronics, 240-614-7086
Ezra Hall, GLOBALFOUNDRIES, 802-662-1032

Dean Klein, Micron Technology, 208-368-4900
Andrew Olney, Analog Devices, 781-937-2362
Tim Scott, Novati Technologies, 512-356-2007
Tyler H. Smith, Intel Federal, 503-712-8581

9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.

This survey will not involve any payment or gifts to respondents.

10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.

The survey, cover letter and fact sheet provide assurance to the respondents that the information collected through the survey will be deemed business confidential and will be treated in accordance with Section 705 of the Defense Production Act of 1950, as amended (50 U.S.C.A. app. Section 2061 et. seq.). This section prohibits the publication or disclosure of such information unless the President determines that its withholding is contrary to the national defense. The survey will be administered and the data collected via a secure U.S. Department of Commerce portal. Information submitted will not be shared with any non-government entity, other than in aggregate form. The U.S. Department of Commerce will protect the confidentiality of such information pursuant to the appropriate exemptions from disclosure under the Freedom of Information Act (FOIA), should it be the subject of a FOIA request. OTE has a long and successful track record of protecting business confidential information collected under the above statute.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.

This survey will not collect information that could be construed as being of a sensitive nature, such as information concerning sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered sensitive or private.

12. Provide an estimate in hours of the burden of the collection of information.

OTE estimates that the total burden placed on respondents by this assessment on U.S. integrated circuits design and fabrication capability survey effort will be approximately 5,600 hours. This estimate is based on distributing surveys to approximately 400 respondents with an average time of 14 hours needed to complete each survey.

This burden estimate is subject to variations among respondents due to discrepancies in level of participation in IC design and fabrication, record keeping, company size, and other variables. The estimate is based on OTE's overall past experience, as well as specific feedback from industry participants in information collections such as bare printed circuit boards, cartridge and propellant actuated devices, underwater acoustic transducers, strategic materials, microelectronics, the U.S. space sector, healthcare products, and others.

The estimated total cost to respondents of this information collection is calculated as \$196,000. This estimate was made by assuming an average hourly respondent work rate of \$35 multiplied by 5,600 total burden hours.

13. Provide an estimate of the total annual cost burden to the respondents or record-keepers resulting from the collection (excluding the value of the burden hours in Question 12 above).

Not applicable.

14. Provide estimates of annualized cost to the Federal government.

The estimated cost to the Federal Government for the survey is \$313,243 over a one-year period. A major portion of this cost is related to the survey questionnaire, which includes preparing, collecting, verifying and tabulating the information, and analyzing the data. Other costs will be incurred in field testing the survey, summarizing the analysis and findings, preparing the final report, and report printing and distribution. The direct employee costs were estimated by assuming the hours spent on the project, about one-year equivalent, or 52 weeks and taking the one-year annual pay of one GS-15, step 10 and one GS-12, step 10. The direct employee costs are \$261,036.

Indirect or overhead costs associated with the project are calculated as 20 percent of the direct employee costs, or \$52,207. A review of OTE budgets from previous years indicates costs for building maintenance, telephone, computers, and space rental charges generally run about 20 percent of total employee costs.

15. Explain the reasons for any program changes or adjustments.

Because the nature of this collection of information falls within BIS's generic authority entitled, "DOC/BIS National Security and Critical Technology Assessments of the U.S. Industrial Base," (OMB Control No. 0694-0119), there is no increase in burden hours. This is the first time BIS has used this authority in FY2017 (a total of 201,000 hours authorized in 2017). An unused balance of 195,400 annual burden hours (201,000 less 5,600 hours) will remain if the survey instrument is approved under this authority.

16. For collections whose results will be published, outline the plans for tabulation and publication.

All data collected will be aggregated before publishing to protect company confidentiality. The surveys will be provided electronically to the 400 companies in January 2017. The analysis will be started in May 2017 and a draft report will be prepared by the end of September 2017. The final report is planned for publication in December 2017.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.

Not applicable. BIS will display the expiration date of this collection authority on all survey and instructional instruments the public receives.

18. Explain each exception to the certification statement.

Not applicable.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

Not applicable.