

SUPPORTING STATEMENT
U.S. Department of Commerce
National Institute of Standards and Technology (NIST)
Survey of the Need for the Improvement of the Infrared Reflectance
Measurements Standards
OMB Control No. 0693-XXXX

A. JUSTIFICATION

This is a request for a new information collection.

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

The Sensor Science Division (SSD) of the Physical Measurement Laboratory (PML) of the National Institute of Standards and Technology (NIST) is responsible for providing standards for the characterization of the optical properties of materials for the United States. This serves the needs of a wide range of industries as well as government and academic laboratories. An increasingly important part of the optical spectrum is the infrared spectral range from 1 μm to 20 μm . Over the past two decades, the SSD has been working to establish physical standards, measurement methods and measurement services in the infrared. However, the set of measurement capabilities is not comprehensive. There are a number of potential directions in which a development effort could be directed. NIST has limited resources of both available funds and manpower. In recent years there have been numerous inquiries and requests for NIST to address specific needs, many of which are related to infrared reflectance. In order to obtain the maximum benefit to the US from any new development at NIST, information from a survey of the members of the infrared optical properties measurement community would be very valuable.

The purpose of the survey is to assess infrared optical properties measurement community needs for standard reference materials, calibration services, workshops, courses, and other means for improvement of the quality of their measurement data and traceability to national standards

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.

Information obtained from the Survey will be used by NIST staff of the *Infrared Technology Group* (Group) in the *Sensor Science Division* of the *Physical Measurement Laboratory*. It will be used as an aid to planning the work of the Group in the project area of Infrared Optical Properties. This work includes: 1) the development of new high accuracy measurement capabilities (instrumentation and measurement methods) within the Group; 2) the development of physical standard reference materials and calibration services to be made available to measurement community customers, including those in industry, academia, and other government agencies; the preparation of short courses for customers; 3) the development of

workshops and conferences to obtain additional information about the critical areas and issues identified in the Survey, as well as disseminate information about NIST's efforts to address those same areas and issues.

NIST intends to make the results of the Survey generally available through presentations at appropriate workshops and conferences, and publish in a refereed journal.

The information will be collected, maintained, used and disseminated in a way that is consistent with the applicable NIST Chief Information Officer (CIO) Information Quality Guidelines and Standards.

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.

The Survey is a PDF document, and will be delivered electronically, via email attachments or downloaded from a NIST webpage. The completed forms will be submitted to NIST in the same fashion. The Survey will be delivered, along with an invitation letter (in ROCIS), to members of the measurement community known to NIST. These include: 1) NIST Calibration Service and Standard Reference Materials infrared optical properties related customers; 2) NIST Short Course participants; 3) participants in a recent NIST-led intercomparison of infrared spectral reflectance; 4) participants of EO-IR Workshops, and SPIE Defense and Security, and Optics and Photonics Symposia; 5) members of standards groups including the Signature Measurements Standards Group of the military's Range Commanders Council; and 6) people who have made direct inquires to NIST staff via phone and email.

4. Describe efforts to identify duplication.

The information collected under this request is not available from an existing program or other source.

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

Not applicable. The collection of information under these programs has no impact on small businesses or other small entities. The collection of information under this request is entirely voluntary. Answers are provided in an easy-to-use pull-down menu selection format, with the opportunity for additional written comments as an option.

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

Without input from the Survey, NIST will have to proceed on the basis of the anecdotal evidence it has obtained to date from direct inquiries and personal communications, as well as its professional expertise, in its decisions about the direction of the infrared optical properties research. Thus, some needs of the measurement community may not be addressed, as they will be unknown. NIST will pursue a measurement improvement program based on limited information. And due to the limitations on the availability of funds and time, the opportunity to meet the unknown needs will have missed if this information is not collected.

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

No special circumstances exist. The information will be collected in accordance with OMB guidelines.

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.

A Federal Register Notice soliciting public comments was published on January 9, 2012 (Volume 77, pages, 1060–1061). No comments were received.

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

Not applicable. No gifts or remuneration will be made.

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

The results will be compiled by the *Infrared Technology Group* staff. The original completed Survey forms will be kept in a secure folder on a NIST server, available only to NIST staff. The respondents' identification information will be removed and replaced with a numerical identifier for the processing and analysis phase of the results. Presentations and publications of the results will not contain any specific identification information specifying the respondent or their

institution/company. Only the general category of institution/company may be mentioned (e.g. aerospace, solar energy, calibration laboratory, government agency, etc.). The Survey introduction letter will notify the respondents of this policy.

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.

No questions of a sensitive nature will be included in this survey.

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

The estimated annual burden hours for this collection will be 50 hours.

$$100 \text{ Respondents} \times 30 \text{ minutes per response} = 50 \text{ Hours}$$

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 cost to the Federal government of the Survey process will be approximately \$50,000, primarily labor. This includes the time spent to develop the survey forms, contact potential respondents, receive and process the submissions, analyze the data and develop conclusions, prepare and deliver presentations, reports, and publications. Approximately \$1500 will be required for travel costs to a conference and/or workshop.

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

This is a new collection of information.

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

The Survey data will be compiled and analyzed by the *Infrared Technology Group* staff. The results will be presented at one or more conferences such as the annual *Conference on Characterization and Radiometric Calibration for Remote Sensing* in Logan, UT, the annual

SPIE Optics and Photonics Symposium in San Diego, CA, the annual *SPIE Defense and Security Symposium* in Baltimore, MD and the *EO-IR Workshop* in various locations including Logan, UT and Gaithersburg, MD. The results will be published in a refereed journal such as *Optical Engineering* or *Applied Optics*.

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.

18. Explain each exception to the certification statement.

Not Applicable.