

National Aeronautics and Space Administration (NASA) Guidelines for Ensuring the Quality of Information

A. Purpose

Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. 106-554, directed the Office of Management and Budget (OMB) to issue Government-wide information quality guidelines. The OMB Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies (67 Federal Register 8452) require each Federal agency to issue agency-specific guidelines for ensuring the quality of disseminated information.

NASA's information quality guidelines detail corresponding procedures, administrative mechanisms, and reporting requirements, and establish NASA's responsibilities for ensuring that its information adheres to the quality guidelines. Included in these guidelines are the procedures for affected persons to seek and obtain correction of information disseminated by NASA.

These Guidelines are suggestions, recommendations, and policy views of NASA. They are not intended to be, and should not be construed as, legally binding regulations or mandates. They do not create any right or benefit, substantive or procedural, enforceable at law or equity, by any party against the United States, its agencies (including NASA), officers, or employees, or any person.

B. Background

Section 203(a)(3) of the National Aeronautics and Space Act of 1958, Pub. L. 85-568, as amended, chartered NASA to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." NASA makes available a diverse wealth of information to Government, industry, academia, and the public. Some examples include scientific and technical information from its world-class research and operational programs, such as reports, journal articles, data, and imagery; information concerning its current vision, mission, goals, programs, and performance, such as performance plans and reports; information regarding the missions it aspires to pursue, such as strategic plans; and educational information, such as curricula, lesson and technology plans, and educational briefs, for K-12 through post-graduate students.

Information from NASA's missions and programs is used by a number of organizations and individuals including, but not limited to, Government, national, and international policymakers formulating public policy; NASA's scientists and others cooperating with NASA to pursue their important work; the media reporting on the importance of NASA's research; the educational community educating a new generation in science, math, and

engineering; and members of the public learning about NASA's goals and accomplishments.

C. Policy and Procedures

C.1. Scope

These guidelines are applicable to NASA Headquarters and Centers, including Component Facilities; and to the Jet Propulsion Laboratory and other contractors where the contract specifies that NASA will review and/or approve information dissemination. These guidelines prescribe policy and procedures for a wide variety of media, such as printed, electronic (including web sites), and other forms of publication disseminated on or after October 1, 2002, regardless of when first disseminated by NASA.

These guidelines are also applicable to information disseminated by the NASA Office of the Inspector General (OIG). Specific mechanisms for the request for correction of NASA OIG information, and the OIG appeals process, are outlined in Section F.

C.2. Guidelines

The OMB definitions of information, dissemination, and quality establish the scope of these guidelines. Where appropriate, NASA has expanded on OMB definitions to provide guidance that is applicable to Agency-specific information.

NASA ensures and maximizes the quality, including the utility, objectivity, and integrity of its disseminated information. Categories of information not covered by these guidelines are detailed in Section C.3.

NASA's "disseminated information" includes any communication or representation of knowledge such as facts or data, in any media or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms.

C.2.a. Basic Standard of Information Quality

This section outlines the basic standard of information quality that NASA's disseminated information must meet. NASA treats information quality as integral to every step of its development of information, including creation, collection, maintenance, and dissemination.

A level of information quality assurance greater than the basic standard is required in those situations that involve influential scientific, financial, or statistical information. The quality standard for influential information is defined in Section C.2.b. Additionally, principles of information quality beyond the basic standard may be adopted as appropriate for specific categories of NASA's disseminated information. Section C.2.c

outlines principles of information quality that may apply to certain categories of NASA's information.

In accordance with OMB guidelines, the basic standard of information quality has three components: *utility*, *objectivity*, and *integrity*. These guidelines sometimes refer to these terms collectively as "quality." In ensuring the quality of its disseminated information, NASA ensures that all of these components are sufficiently addressed.

C.2.a.1. Utility. *Utility* refers to the usefulness of the information to its intended users, including the public. The following principles relate to information utility:

Intended Purpose

- To provide useful, relevant information, NASA stays informed about the information needs of its stakeholders and develops new data, models, and information where appropriate.
- When currency of information is critical, NASA ensures that relevant information is made available in a timely manner and updated as appropriate.
- NASA's information is reviewed by content owners, at a frequency appropriate for the type of information, to ensure that it remains relevant and timely.

Intended Audience

- NASA's information is made widely available and broadly accessible, as appropriate and practical for the target audience.
- NASA ensures that its information is accessible to all potential users, including individuals with disabilities and those with limited English proficiency.

C.2.a.2. Objectivity. *Objectivity* addresses whether disseminated information, as a matter of substance and presentation, is accurate, clear, complete, and unbiased, including the background information where warranted by the circumstances. The following principles relate to information objectivity:

Accuracy

- Reasonable efforts are made to ensure that information disseminated by NASA is based on reliable and accurate data using standard NASA validation procedures.
- Where possible, NASA's public information is subject to editorial review to ensure that it is free from grammatical, spelling, and typographical errors.
- Where feasible and appropriate, NASA informs users of corrections to the Agency's information resulting from discovery of errors.

Clarity

- Where possible, NASA's information is reviewed before release to ensure clarity and coherence of the material presented.

Completeness

- NASA’s information includes, to the extent feasible, the proper context to ensure completeness of the material presented.
- Where feasible, data presented by NASA have full and accurate documentation, and circumstances affecting data quality are identified and disclosed to users.

Lack of Bias

- NASA utilizes systematic analysis and review processes to remove potential biases from its information.
- To the extent possible, NASA ensures that information is presented without the appearance of bias.

C.2.a.3. Integrity. *Integrity* refers to the security of information, which is protection of the information from unauthorized access or revision, to prevent the information from being compromised through corruption or falsification. The following principles relate to information integrity:

- NASA employees responsible for classified information, draft materials, and otherwise sensitive information utilize appropriate security controls and mechanisms to protect the information from improper dissemination.
- When information integrity has been compromised, NASA takes immediate steps to remedy the situation and facilitate correction of the compromised information.

A key aspect of information integrity is ensuring that NASA’s computer systems remain protected from unauthorized access or other threats that could damage the information residing therein. The roles and responsibilities of the Agency with respect to information technology (IT) Security are outlined in detail in NASA Procedures and Guidelines (NPG) 2810.1, “Security of Information Technology.”

C.2.b. Quality Level for Influential Information

NASA requires a higher standard of quality for information that is considered *influential*. Influential scientific, financial, or statistical information is defined as NASA information that, when disseminated, will have or does have clear and substantial impact on important public policies or important private-sector decisions.

Each NASA organizational director will be responsible for determining which of the organization’s disseminated information falls into this limited category. Where information is considered influential, the responsible organization shall demonstrate the safeguards and policies that are in place to ensure the quality of the information.

OMB requires more stringency for ensuring the quality of influential scientific, financial, or statistical information. For these categories of influential information to be considered compliant with quality guidelines, the information must be *transparent* and *reproducible*

to the greatest possible extent (see Sections C.2.b.1 and C.2.b.2 for definitions of these terms).

Principles related to ensuring the transparency and reproducibility of information are outlined below.

C.2.b.1. Transparency. The measure of *transparency* refers to the extent that information, particularly that of a scientific or statistical nature, has supporting data documented and made available. Information that is “sufficiently transparent” provides enough insight into the underlying data and methods of analysis to allow, in theory, independent reanalysis by the qualified public.

- In disseminating information of an influential nature, NASA describes the data used, the various assumptions employed, the specific analytic methods applied, and the statistical procedures utilized, as practical and appropriate.

C.2.b.2. Reproducibility. The measure of *reproducibility* refers to the extent that the information is capable of being substantially reproduced, subject to an acceptable degree of imprecision. For information judged to have more important impacts, the degree of imprecision that is tolerated is reduced. Conversely, for information judged to have less impact, the degree of imprecision that is tolerated is increased. With respect to analytic results, “capable of being substantially reproduced” means that independent analysis of the original or supporting data using identical methods would generate similar analytic results, subject to an acceptable degree of imprecision or error.

- Each NASA organization is responsible for determining which categories of original and supporting data will be subject to the reproducibility requirement. NASA identifies and may limit the specific types of data that can practicably be “reproduced,” given ethical, feasibility, or confidentiality constraints.
- When it is not practical or warranted to apply the reproducibility standard to data or information, NASA ensures greater transparency of the methods used to produce the data or information.

C.2.c. Principles for Specific Categories of Information

Information used in conducting the Agency’s daily business falls into five categories. NASA ensures the quality of information in each information category by adhering to the key principles outlined below.

C.2.c.1. Mission Information

This category consists of information that directly supports NASA’s human space flight, launch operations, space vehicle operations, wind tunnel operations, training simulation vehicles, and other mission-related activities.

- NASA protects its mission information from alteration or destruction, particularly where proprietary or sensitive information is involved.
- NASA protects information related to individuals involved in NASA's missions.

With respect to information that involves risks to human health, safety, and the environment, NASA ensures that the following have been analyzed and/or documented, to the extent practical:

- Expected risks for each affected population;
- Acceptable upper and lower bounds of risk;
- Uncertainties identified during the risk assessment process and how the uncertainties were or will be addressed;
- Peer review studies related to risk estimates; and
- Methodologies used to reconcile inconsistencies in the scientific data.

C.2.c.2. Business and Restricted Technology Information

This category consists of information related to financial, legal, payroll, personnel, procurement, source selection, and other business and restricted technology activities.

- NASA ensures that categories of information requiring protection or restricted access under law are appropriately handled and protected from inappropriate dissemination. Examples of the types of information to which public access may be prohibited or limited include national security classified information; export-controlled information; personal information subject to the Privacy Act; and documents disclosing inventions, proprietary information, trade secret information, or Small Business Innovation Research (SBIR) data (as defined in FAR 52.227-20).
- In situations in which public access to data and methods will not occur due to reasons described above, NASA will apply especially rigorous robustness checks to analytic results. NASA will ensure the disclosure of, and appropriately document, the specific data sources, quantitative methods, and assumptions that have been employed.

C.2.c.3. Scientific, Engineering, and Research Information

This category consists of information that supports basic research, engineering, and technology development.

- NASA ensures that its scientific, engineering, and research information is subject to the appropriate level of pre-dissemination review, commensurate with the nature, scope, purpose, and significance of the information and its intended audience.
- NASA ensures that the underlying methodologies, data, and assumptions employed are appropriately transparent and documented to the greatest possible extent.

C.2.c.4. Administrative Information

This category consists of information such as general electronic or written correspondence, briefing information, program/project status documents, organizational documentation, strategic plans, and other information of an administrative or general nature.

- NASA ensures that administrative information is reviewed regularly to ensure its continued relevance and accuracy.

C.2.c.5. Publicly Accessible Information

This category consists of information that is intended for general use by the public, such as material related to NASA's educational programs.

- NASA's publicly accessible information is reviewed prior to dissemination to ensure that it is appropriate for its intended audience, uses plain language wherever possible, and meets a basic level of quality.
- NASA's key information is made available to the general public through the widest possible dissemination.
- NASA carefully reviews references and links to external sources of information to ensure that they are business related and do not lead to an apparent conflict of interest, inappropriate endorsement, or embarrassment to the Agency.
- NASA ensures that its information collection activities result in information that is collected, maintained, and used in a way consistent with the OMB and NASA information quality guidelines.

C.3. Information Not Covered by Guidelines

These guidelines do not apply to information not "disseminated." "Dissemination" means Agency-initiated or Agency-sponsored distribution of information to the public (see 5 CFR 1320.3(d) "Conduct or Sponsor"). Dissemination does not include distributions of information or other materials that are:

- Intended for Government employees or Agency contractors or grantees;
- Intended for U.S. Government agencies;
- Produced in responses to requests for Agency records under the Freedom of Information Act, the Privacy Act, the Federal Advisory Committee Act, or similar laws;
- Correspondence or other communication limited to individuals or to other persons as defined in Section H.1;
- Communications such as press releases or press conferences, interviews, speeches, fact sheets, or similar communications in any medium that announce, support the announcement, or give public notice of information that NASA has disseminated elsewhere; or

- Communications by NASA-associated individuals working in their private capacity, where the issuance or publication is not represented as being an official position of the Agency or used by the Agency in support of its official position.

The exemption for press releases and materials delivered to Congress exists as long as facts backing up the original press release or information have been previously disseminated.

Excluded from the definition of “disseminated information” are archival records; public filings; responses to subpoenas or compulsory document productions; or documents prepared and released in the context of adjudicative processes. These guidelines do not impose any additional requirements on agencies during adjudicative proceedings and do not provide parties to such adjudicative proceedings any additional rights of challenge or appeal.

These guidelines do not impose any additional requirements on the Agency for rulemakings, adjudications, or other Agency actions or information products where existing well-established procedural safeguards that allow affected persons to contest information quality on a timely basis exist. In cases where the Agency disseminates information prior to the final Agency action in rulemakings, adjudications, or other Agency actions or information products, requests for correction may be considered prior to the final Agency action in those cases where the Agency has determined that an earlier response would not unduly delay issuance of the final Agency action and the complainant has shown a reasonable likelihood of suffering actual harm from the Agency’s dissemination if the Agency does not resolve the complaint prior to the final Agency action.

C.4. Process for Ensuring NASA’s Information Quality

NASA has policies and processes in place to ensure that information produced and disseminated by the Agency meets a basic level of quality—both for technical accuracy and for clarity. Much of the information that NASA issues in the Agency's name, uses to support policies, or utilizes to reach mission decisions is subject to managerial, quality, and/or peer review.

Some of the review processes utilized by NASA are described below. These review processes are utilized at the discretion of the organizations that produce NASA's content, depending on the type of information, intended audience, and other relevant factors.

Editorial Review

Much of NASA's information for the public is subject to editorial review by a technical editor or other professional. When subject to an editorial review, the information produced is clearly written and free of spelling and grammatical errors.

Compliance Review

The author, technical monitor, or other NASA official responsible for an information product ensures that the information is reviewed for compliance with law and NASA policy. NASA's information may be subject to limited dissemination if issues relating to export control, public or employee privacy, proprietary information or copyright (e.g., information from our contractors) dictate the information's protection.

Content Review

NASA's information is subject to content review to ensure its quality and integrity. Content review assesses the information product in terms of readability, its communication of information, and its suitability for a particular audience. In general, the author, content owner, or other NASA official responsible for an information product ensures that content reviews are conducted before the information is disseminated.

The level and type of content review is commensurate with the formality and format of the publication; for example, NASA's formally published scientific and technical reports undergo a different type of content review than other types of information. NPG 2200.2, "Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information," describes the content review process that NASA's formally published scientific and technical information is subject to before release.

Peer Review

The use of peer review and advice from committees broadly representative of NASA's customers helps NASA to ensure the quality of its information. Where data and analytic results have been subjected to formal, independent, external peer review, the information is presumed to be objective, subject to rebuttal based on a persuasive showing by the petitioner in a particular instance.

To ensure competent and credible Agency-conducted peer reviews, NASA ensures that reviews are performed in an open and rigorous manner. NASA strives to form diverse, expert groups of reviewers (both formal and ad hoc) that encompass the full range of scientific and technical expertise required to ensure the technical accuracy of information. Peer reviewers are selected on the basis of technical expertise and are requested to disclose prior technical or policy positions that may affect the issues at hand and to disclose sources of personal and institutional funding that may affect or appear to affect their technical judgment.

D. Administrative Mechanisms

If an affected person believes that information disseminated by NASA does not meet the guidelines for quality (utility, objectivity, and integrity), he or she may seek correction of the information.

Requestors seeking correction of information under NASA's information quality guidelines must follow the procedures outlined below. NASA's information quality guidelines and the procedures used to request correction of information may also be found on the Agency's information quality web site, located at: <http://infoquality.hq.nasa.gov/>, or via the NASA home page, located at: <http://www.nasa.gov/>.

These procedures apply only to requests for the correction of information relevant to the information quality guidelines.

- Requests must be in writing and may be submitted by commercial courier, regular U.S. Postal Service mail, e-mail, or fax;
- Requests must indicate that the correction of information is requested under NASA's information quality guidelines;
- Requests must include the requestor's name, telephone number, preferred mechanism for receiving a written response from NASA (fax, e-mail, regular mail) with applicable contact information, and organizational affiliation;
- Requests must indicate how the requestor is an affected person for the purposes of these guidelines (as defined in Section H);
- Requests must clearly describe the information that the requestor believes needs correcting for failure to comply with the OMB and/or NASA standards; and
- Requests must state specifically why the information should be corrected and, if possible, recommend specifically how it should be corrected. Requests should be accompanied by documentary evidence to support the claim.

Requests for correction should be sent to the following address:

Information Quality Guidelines
NASA Headquarters / Code AO
Washington, DC 20546-0001

Fax: 202-358-3063 (attn: Information Quality Officer)

E-mail: infoquality@hq.nasa.gov

In its review, NASA will determine if the information in question does not meet the appropriate quality standards and needs to be corrected. The review of the information

will be limited to that part or those parts of the information that are indicated to be in error.

If NASA decides that correction of the information is warranted, NASA will correct the information in accordance with existing statutes, regulations, and procedures. NASA will undertake a degree of correction appropriate to the nature and timeliness of the information involved. NASA will inform the requestor in writing of the decision and the action taken.

If NASA decides not to correct the information, the requestor shall be informed promptly in writing of the decision not to correct the information, the reason for refusal, the date of the refusal, and the opportunity for appeal.

NASA will respond in writing to a request for correction of information within 60 calendar days of receipt of the information. NASA may extend the 60-day response period if additional time is required to review the request for correction of information. NASA will contact the requestor if an extension of response time is needed and will indicate the reason for the delay in responding and an estimated decision date.

NASA may reject requests for information correction submitted in bad faith, or if the Agency determines that:

- The requestor is not an affected person (as defined in Section H);
- The information required to process a review is not provided in full; or
- The request for correction is frivolous.

NASA will maintain file records of each request for information correction, including copies of the original request, the response from NASA, and notification to the requestor of NASA's decision and action taken.

E. Appeal Process

If an "affected person" who requested correction under the process noted in Section D does not agree with the decision, the person may appeal the decision within 60 calendar days of the decision. Appeals must be sent to the following address in writing and may be submitted by commercial courier, regular U.S. Postal Service mail, e-mail, or fax.

Information Quality Guidelines: Appeals
NASA Headquarters / Code AO
Washington, DC 20546-0001

Fax: 202-358-3063 (attn: Information Quality Officer)

E-mail: infoquality@hq.nasa.gov

Requestors must include complete contact information (name, organizational affiliation, mailing address, fax number, e-mail address, and telephone number), and copies of the initial request for correction of information, documentation to support the correction, the NASA response, and a written argument to support the appeal.

An Agency official will consider the request for appeal or will delegate the decision on the appeal to an appropriate individual or group. If NASA determines that other agencies or organizations may have an interest in the appeal, NASA will consult those agencies or organizations. To ensure objectivity, individuals involved in the original dissemination of the information or the decision pertaining to the original request for correction will not be included in the appeal process. All appeals will be processed within 60 calendar days unless NASA determines that a fair review cannot be made within this timeframe. NASA will contact the requestor if an extension of response time is needed, and will indicate the reason for the delay in responding and an estimated decision date.

If, after review, NASA determines that the original decision should be overturned, NASA will advise the requestor of its decision. If applicable, NASA will then correct the information in accordance with existing statutes, regulations, and procedures and notify the requestor and interested or affected parties. If NASA determines that correction of the information is not warranted, NASA will advise the requestor of the denial and the reason and authority for the denial.

NASA will maintain records of each appeal request, the response from NASA, and notification to the requestor of the appeal decision.

F. Administrative Mechanisms and Appeals for NASA OIG Information

The NASA OIG maintains its own process for receiving and processing requests for correction of OIG information and any resulting appeals.

Requests for correction of NASA OIG information are processed by the OIG. Requests may be submitted by commercial courier, regular U.S. Postal Service mail, or fax to the following address:

Office of Inspector General
NASA Headquarters / Code W
Washington, DC 20546-0001

Fax: (202) 358-2767 (attn: Information Quality Correction Request)

Appeals of a NASA OIG decision must be sent to the following address in writing, by mail or fax:

Deputy Inspector General
Office of the Inspector General
NASA Headquarters / Code W
Washington, DC 20546-0001

Fax: (202) 358-2767 (attn: Information Quality Appeal)

The full NASA OIG administrative mechanisms and appeals process can be found on the NASA OIG web page, located at:
<http://www.hq.nasa.gov/office/oig/hq/mechanisms.html>

G. NASA Reporting Requirements

Pursuant to OMB requirements, NASA will submit an annual report on the number and nature of complaints received by the Agency regarding the accuracy of the information it disseminates. The report will contain, as appropriate, both quantitative and qualitative information about the complaints received, the resolution of the complaints, and the number of NASA staff hours that were devoted to handling requests related to the information quality guidelines. The report will also include an explanation of Agency decisions to deny or limit corrective action. The first annual report, due to OMB by January 1, 2004, will document requests received and actions taken during Fiscal Year 2003.

H. Definitions Based on OMB Guidance

H.1. Affected persons

Persons who may benefit from or be harmed by the disseminated information. This includes persons who are seeking to address information about themselves or about other persons to which they are related or associated, as well as persons who use information. "Person" means an individual, partnership, association, corporation, business trust, or legal representative, an organized group of individuals, a regional, national, State, territorial, tribal, or local Government or branch thereof, or a political subdivision of a State, territory, tribal, or local Government or a branch of a political subdivision, or an international organization.

H.2. Dissemination

"Dissemination" means Agency-initiated or Agency-sponsored distribution of information to the public (see 5 CFR 1320.3(d) "Conduct or Sponsor").

H.3. Influential

When used in the phrase "influential scientific, financial, or statistical information," influential refers to disseminated information that NASA determines will have a clear and substantial impact on important public policies or important private sector decisions.

H.4. Information

Information means any communication or representation such as facts or data, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms. This definition does not include:

- Opinions, where the presentation makes clear that the statements are subjective opinions, rather than facts. Underlying information upon which the opinion is based may be subject to these guidelines only if that information is published by NASA;
- Information originated by, and attributed to, non-NASA sources, provided NASA does not expressly rely upon it. Examples include: non-U.S. Government information reported and duly attributed in materials prepared and disseminated by NASA; hyperlinks on NASA's website to information that others disseminate; and reports of advisory committees published on NASA's web site;
- Statements related solely to the internal personnel rules and practices of NASA and other materials produced for NASA employees, contractors, agents, or alumni;
- Descriptions of the Agency, its responsibilities and its organizational components;
- Statements, the modification of which might cause harm to national security, including harm to national defense or foreign relations of the United States;
- Testimony or comments of NASA officials before courts, administrative bodies, Congress, or the media, as long as the information presented has been previously disseminated in some form;
- Investigative material compiled pursuant to U.S. law or for law enforcement purposes in the United States; or
- Statements which are, or which reasonably may be expected to become, the subject of litigation, whether before a U.S. or foreign court or in an international arbitral or other dispute resolution proceeding.

H.5. Integrity

Integrity refers to the security of information – protection of the information from unauthorized access or revision, to prevent the information from being compromised through corruption or falsification.

H.6. Objectivity

Objectivity addresses whether disseminated information is being presented in an accurate, clear, complete, and unbiased manner, including background information where warranted by the circumstances.

H.7. Quality

Quality is an encompassing term comprising integrity, objectivity, and utility. Therefore, the guidelines sometimes refer to these four statutory terms collectively as "quality."

H.8. Reproducibility

The information is capable of being substantially reproduced, subject to an acceptable degree of imprecision. With respect to analytic results, "capable of being substantially

reproduced" means that independent analysis of the original or supporting data, using identical methods would generate similar analytic results, subject to an acceptable degree of imprecision or error.

H.9. Transparent/Transparency

Information that has transparency is clear and well documented. For scientific information, transparency refers to the extent that underlying assumptions, methodologies, and analytical processes are made available as context.

H.10. Utility

Utility refers to the usefulness of the information to its intended users including the public.