National Institutes of Health

Enterprise Architecture Standards Process

Version 2.1

Status of this Memo

This document specifies a governance process for the National Institutes of Health (NIH) and requests discussion and suggestions for improvements. Distribution of this memo is unlimited.

Abstract

This memo documents the process used by the NIH community for the creation of architecture standards for information technology (IT). It defines the steps in the standardization process, the requirements for promoting a document through the steps, and the types of documents used during this process.

Approved 5/23/2007

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1   Introduction

This memo documents the process used by the NIH community for the standardization of information technology architecture. The NIH architecture standards process is an activity of the NIH enterprise architecture program that is organized and managed on behalf of the NIH community by the Office of the Chief Information Technology Architect (OCITA).

To view graphical representations of the processes described in this document, view the process models on the NIH Enterprise Architecture website at
http://enterprisearchitecture.nih.gov/YourPart/Collaborate/ParticipateNRFC.htm.

1.1   Background and Definition of a Standard

The National Institutes of Health, an organization of Institutes and Centers (ICs), is the steward of medical and behavioral research for the United States. In this role NIH sees a vital responsibility for information technology to maximize the benefits of biomedical research through improved collaboration among the researchers and better dissemination of the results to the medical community and the public. Enterprise IT Architecture is a key element in creating an IT environment that is both effective and efficient. The procedures in this document guide the development of the NIH Enterprise Architecture in the consensus driven environment that is NIH.

The NIH enterprise architecture standards process described in this document is concerned with all consensus-driven standards that are developed as part of the NIH Enterprise Architecture for IT. In the case of standards developed by non-NIH organizations, however, the standards process normally applies to the application of the protocol or procedure in the NIH context, not to the standard itself.

In general, an NIH standard is a specification that is:

- Stable and well-understood,
- Technically competent,
- Recognizably useful in some or all parts of NIH, or is either
- Required for integration within NIH or between NIH and its partners or grounded in documented, generally accepted industry or government wide best practices or standards.

A **specification** is a written description that describes a system, system component, approach, or protocol. NIH **architecture standards** are necessary for the inter-working, portability, and reusability of NIH information systems and systems components across the enterprise. These types of specifications are written and communicated to the NIH community and adopted via the formal review process described in this document.

1.2   Process Goals and Intent

The goals of the NIH standards process are:

- Technical excellence
- Adoption of proven technology in the NIH environment
- Clear, concise, and easily understood documentation
- Openness and fairness
- Timeliness
- NIH-wide distribution and use

These procedures are intended to provide a fair, open, and objective basis for developing, evaluating, and adopting NIH enterprise architecture standards. At each stage of the standardization process, a specification is repeatedly discussed and its merits debated in open meetings and via discussion groups on the NIH portal in the NIH Enterprise Architecture Community.

2   Standards Development and Documentation

There are two, primary development processes and documentation sources for architecture standards at NIH: domain teams and NIH Requests for Comments (NIHRFC).

2.1 Standards Decision Criteria

Regardless of which approach for proposing standards is followed, sound decision analysis is required by the "Architecture Standards Process." NIHRFC0015, "Decision Criteria for Selecting NIH Standards" identifies a set of baseline decision criteria that NIH stakeholders shall use and may augment when evaluating and proposing new technology standards. This structured approach to decision-making not only ensures a fair process for selecting standards, it also significantly increases the probability that NIH will adopt the best standards for NIH's current environment and requirements. Ultimately the Architecture Review Board (ARB) will approve or disapprove a proposed standard, based, in part, on the results of this structured decision analysis.

2.2 Request for Information (RFI) Process

The Clinger-Cohen Act of 1996 mandates that agency Chief Information Officers (CIOs) develop, maintain, and facilitate the implementation of a sound and integrated information technology architecture. **Information technology architecture** is specifically defined as "an integrated framework for evolving or maintaining existing information technology and acquiring new information technology to achieve the agency's strategic goals and information resources management goals." [1]

The Federal Acquisition Regulation (FAR) was established to codify uniform policies for acquisition of supplies and services by executive agencies. It is issued and maintained jointly, pursuant to the Office of Federal Procurement Policy (OFPP) Reauthorization Act, under the statutory authorities granted to the Secretary of Defense, Administrator of General Services and the Administrator, National Aeronautics and Space Administration. Statutory authorities to issue and

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[1] http://www.cio.gov/documents/it_management_reform_act_feb_1996.html

revise the FAR have been delegated to the Procurement Executives in Department of Defense (DOD), GSA and National Aeronautics and Space Administration (NASA).[2]

Of particular concern to the NIH enterprise architecture team is the FAR's explicit prohibition against referencing brand names or product names in agency requirements:[3]

> **11.105 Items peculiar to one manufacturer.**
>   Agency requirements shall not be written so as to require a particular brand name, product, or a feature of a product, peculiar to one manufacturer, thereby precluding consideration of a product manufactured by another company, unless—
>   **(a)(1)** The particular brand name, product, or feature is essential to the Government's requirements, and market research indicates other companies' similar products, or products lacking the particular feature, do not meet, or cannot be modified to meet, the agency's needs;
>   **(2)(i)** The authority to contract without providing for full and open competition is supported by the required justifications and approvals (see 6.302-1); or
>   **(ii)** The basis for not providing for maximum practicable competition is documented in the file (see 13.106-1(b)) or justified (see 13.501) when the acquisition is awarded using simplified acquisition procedures.
>   **(3)** The documentation or justification is posted for acquisitions over $25,000. (See 5.102(a)(6).)

In order to "evolve" the information technology infrastructure at NIH, as required by the Clinger-Cohen Act, there is an inherent requirement to specify technology standards, of which some must be defined as product standards. To meet the requirements of both statutes NIH Architecture Standards Process includes a request for information (RFI) process. This process ensures NIH decision-makers have access to the most current market information and manufacturers and vendors have an opportunity to participate.

After a standards author(s), whether they are a domain team, individual, or organization, identifies the need for an architecture standard, they must consider the decision criteria outlined in NIHRFC0015, "Decision Criteria for Selecting NIH Standards." In the event that the proposed standard requires selecting among various manufactured products, the stakeholder, generally with the assistance of OCITA, will write a RFI and then work with the National Library of Medicine (NLM) to publish it on www.fedbizopps.gov.

The RFI will include specific questions to which vendors may respond within a fixed, published timeframe. The vendors' answers to the published questions, and additional, independent market research, will be used by the authors of the proposed standard, in combination with criteria weights and other available information, to score the various products. The resulting weighted scores and the expert judgment of the standards authors will enable the authors to propose which products should be categorized in the architecture lifecycle categories that comprise a brick.

The ARB will consider the authors' analysis, which is informed by the RFI process, when deliberating and rendering its decision on the proposed standard. The ARB is the approval authority for all architecture standards.

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[2] http://www.acqnet.gov/far/authorityframe.html
[3] Federal Acquisition Regulation, section 11.105
http://www.acqnet.gov/far/current/html/Subpart%2011_1.html#wp1086821

3   Domain Teams

Enterprise Architecture domain teams are convened by the Chief Architect to develop standards and guidelines for IT at the NIH. The work of the domain teams is consensus-based. The domain teams produce reports that include recommended IT principles, architecture patterns and bricks, and recommendations for action. Because all ICs are invited to participate in the domain team process, it is assumed the ICs have delegated decision-making authority to their respective representatives. Therefore, it is assumed that the domain teams' recommendations have been vetted by the ICs. However, OCITA will announce via the NIH Enterprise Architecture LISTSERV and the NIH Portal when the domain teams' recommendations are published. Thereafter, all stakeholders, including the ICs will have an opportunity to review and comment on the domain teams' recommendations prior to the ARB's consideration of the domain teams' recommendations and adoption as standards.

The IT Management Committee Enterprise Architecture Subcommittee (ITMC-EA) reviews the domain team reports, develops comments and recommendations on the disposition of the domain teams' findings, and forwards the reports with their recommendations and findings to the ARB. The ARB is the approval authority for the architecture recommendations contained in the reports. The IT Working Group (ITWG) is the final authority on disputed recommendations from the domain teams' findings and recommendations.

4   NIH Request for Comments (NIHRFC)

This NIH Request for Comments (NIHRFC) document series is the official publication channel for NIH standards documents, which are produced outside of the domain team process, and other architecture-related documents.

These documents are published in Adobe portable document format (PDF) on the NIH Enterprise Architecture website at http://enterprisearchitecture.nih.gov. This site is the authoritative source for this document series.

There are four sub-series in the main NIHRFC series: standards, best community practice, informational, and governance.

4.1 NIHRFC Standards Sub-series

Some NIHRFCs document NIH standards. These NIHRFCs form the standard sub-series of the NIHRFC series and will receive a 'Standard' category label, in addition to a NIHRFC number.

A specification that is intended to be documented in standards sub-series NIHRFC must be posted in the NIH Enterprise Architecture community on the NIH Portal. An NFRC author must submit it in the format prescribed in NIHRFC0003, "Instructions to NIHRFC Authors." A template (NIHRFC0009) is available on the NIH Portal and from http://enterprisearchitecture.nih.gov.

The document must clearly identify the purpose and expected outcome of the standard before the document enters the review and approval process.

The NIHRFC shall be subject to review by the community for no less than ten business days. NIHRFC authors are required to respond to each discussion comment on the NIH Portal to ensure that all stakeholders' concerns can be incorporated into the document to the extent possible. After this time period has elapsed, the Chief Architect will initiate one of the following actions:

1. Return the NIHRFC to the author for additional information, clarification, or significant formatting, grammar, or style revisions.
2. Refer the NIHRFC to a domain team or ad hoc working group.
3. Extend the review period.
4. Forward the NIHRFC to the ARB for consideration.

If the NIHRFC requires review by a domain team or ad hoc working group, the respective team must make a recommendation to the ARB on the disposition of the NIHRFC.

Regardless of the duration of the review period for the NIHRFC, OCITA shall provide a five business day advance notice of the expiration of the review period. As an example, a document is posted to the NIH portal, and OCITA announces the beginning of the review period. Five business days later, OCITA announces that there are five days remaining in the review period. At the conclusion of the minimum ten business days, OCITA may close the review period, and the NIHRFC author may incorporate recommendations into the final NIHRFC. Thereafter, the NIHRFC author or OCITA may request the ITMC Enterprise Architecture Subcommittee and the ARB consider the NIHRFC for adoption as a standard. The ITMC Enterprise Architecture Subcommittee may make a recommendation to the ARB. However, the ARB is the decision authority for a standard or specification.

The ITMC Enterprise Architecture Subcommittee and the ARB may consider all pending standards sub-series NIHRFCs during the regular course of business as outlined in these bodies' governing charters.

The NIHRFC author or a delegated representative shall be prepared to brief the ARB or other architecture governing bodies that are considering a proposed standard. Briefing topics might include but are not limited to the justification of a proposed standard, supporting decision analysis, and any unresolved conflicts. Regardless of whether or not the governing body requires the author to brief, a document supplement must be included describing any applicable decision analysis and the status of unresolved conflicts.

If a standards action is approved, notification is sent to the OCITA and copied to the ARB and ITMC with instructions to publish the specification as an NIHRFC.

OCITA will maintain a minimum biweekly status report on the NIH Portal, describing the disposition of pending and approved NIHRFCs.

The enterprise architecture website http://enterprisearchitecture.nih.gov is the authoritative source for approved NIHRFCs.

4.2 NIHRFC Best Community Practice (BCP) Sub-series

Some NIHRFCs are statements of principle or an agreed upon approach to completing a process, operation, or architectural function. These NIHRFCs form the best community practice (BCP) sub-series and are assigned a "Best Community Practice" category label, in addition to a NIHRFC number.

The BCP sub-series of the NIHRFC series is designed to be a way to standardize practices and the results of community deliberations. A BCP document is subject to the same basic set of procedures as is a standards document and thus is a vehicle by which stakeholders can define and ratify the community's best current thinking on a statement of principle or on what is believed to be the best way to perform some operations or architecture process function.

Historically NIH architecture standards have generally been concerned with the technical specifications for hardware, data, and software required for interoperation within the NIH community. However, since the NIH is composed of systems operated by a variety of organizations, with diverse goals and rules, good user service requires that the operators and administrators of the NIH information services follow some common guidelines for policies and operations. While these guidelines are generally different in scope and style from architecture standards, their establishment needs a similar process for consensus building.

ICs have a role to play in the enterprise architecture process, independent of domain teams and ad hoc working groups. As leaders in the NIH technical community, the ICs should have an outlet to propose ideas to stimulate work in a particular area, to raise the community's sensitivity to a certain issue, to make a statement of architecture principle, or to communicate their thoughts on other matters. The BCP sub-series creates a smoothly structured way for the ICs to insert proposals into the consensus-building machinery of the NIH architecture while gauging the community's view of that issue.

An IC or other NIH stakeholder may submit BCP to OCITA for review. After a ten business day waiting period, and after OCITA has approved the document, the process ends and the document is published. The resulting document is viewed as having the technical approval of the Chief Architect.

Because BCPs are meant to express community consensus but are arrived at more quickly than standards, BCPs require particular care. Specifically, BCPs should not be viewed simply as stronger informational NIHRFCs but rather should be viewed as documents suitable for content different from informational NIHRFCs.

4.3 NIHRFC Informational Sub-series

An "informational" specification is published for the general information of the NIH enterprise architecture community and does not represent an NIH community consensus or recommendation.

The "informational" designation is intended to provide for the timely publication of a very broad range of responsible informational documents from many sources and the Chief Architect's consent for publication. The Chief Architect must validate that the document is applicable to the NIH enterprise architecture community and does not place NIH at risk.

Unless they are the result of architecture domain team action, informational documents should be submitted directly to OCITA at EnterpriseArchitecture@mail.nih.gov. OCITA will publish any such documents to the NIH Portal. OCITA will wait ten business days after this publication for comments before proceeding further. OCITA is expected to exercise good judgment concerning the editorial suitability of an informational NIHRFC and may refuse to publish a document that, in the expert opinion of the Chief Architect, is unrelated to NIH architecture activity or falls below the technical and/or editorial standard for NIHRFCs. After the minimum ten business days have expired and no other further action is initiated by a stakeholder, OCITA may publish the NIHRFC to the authoritative source for enterprise architecture standards http://enterprisearchitecture.nih.gov. Generally NIHRFCs in this sub-series does not require ARB approval.

However, OCITA will ensure that informational designations are not misused to circumvent the standards processes. As such, OCITA will refer to the ARB any document submitted for informational publication, which, in the opinion of OCITA, may be related to work being done, or expected to be done, within the NIH enterprise architecture community. The ARB shall review such a referred document within a reasonable period of time, and recommend either that it be published as originally submitted or referred to OCITA as a contribution to the NIH Enterprise Architecture Standards Process.

If the ARB recommends that the document be brought within the standards sub-series but the author declines to do so, or if the ARB considers that the document proposes something that conflicts with, or is actually inimical to, an established architectural effort, then the document may still be published as an informational NIHRFC. In these cases, however, OCITA may insert an appropriate disclaimer into the NIHRFC either in or immediately following the "Status of this Memo" section in order inform stakeholders about the circumstances of its publication.

4.4 NIHRFC Governance Sub-series

Some NIHRFCs document architecture processes that govern the creation and application of the NIH Enterprise Architecture. These NIHRFCs form the Governance sub-series and are assigned a "Governance" category label, in addition to a NIHRFC number.

The Governance sub-series documents the processes that govern the operation of the architecture program itself. For example, this document defines the NIH Enterprise Architecture Standards Process and is published as a Goverance document. A Governance document is subject to the same basic set of review and approval procedures as is a standards document and thus is a vehicle by which stakeholders can define and ratify the community's best current thinking on what is believed to be the best way to perform an architecture process function.

4.5 Draft NIHRFCs

During the development of a specification or a standard, draft versions of the NIHRFC document are available for review and comment on the NIH Portal in the NIH Enterprise Architecture community. Recommended changes and comments must be submitted in the discussion area, which is attached to the document, to ensure an open, collaborative approach to standards specification. NIHRFC authors are required to respond to each discussion comment on the NIH Portal to ensure that all stakeholders' concerns can be incorporated into the document to the extent possible.

A draft, proposed, or revised NIHRFC will be moved to an archived status, if it has not been approved within 6 months of its submission to OCITA in order to reduce overhead in the administration of the process and confusion concerning the status of unapproved documents. In the case of a revision that has not been approved, the previous version will remain the authoritative source until it is classified as obsolete or retired. Subsequent to a document being deleted, stakeholders may resubmit a newly revised version of the document at a later date.

The NIHRFC author is the only authorized editor for substantive changes to an NIHRFC unless the NIHRFC author has appointed a delegate. An NFRC author must submit it in the format prescribed in NIHRFC0003, "Instructions to NIHRFC Authors." A template (NIHRFC0009) is available on the NIH Portal. OCITA will appoint an NIHRFC editor to proofread the document for grammar, consistency, and readability. In the case of a minimal number of minor errors of these types, the NIHRFC editor may make the change to the document but must document and notify the author of the changes.

Standards sub-series NIHRFCs should include the rationale, justification, or decision criteria and analysis that supports the proposed standard.

A draft NIHRFC in the standards sub-series may not become a standard without the approval of the ARB. However, a draft NIHRFC in the BCP or informational sub-series may be published after a minimum ten business-days review period on the NIH Portal.

All draft NIHRFCs will contain a "Draft" stamp or watermark. The NIHRFC Editor will assign the NIHRFC number and appropriate category label when the document is ready for review by the NIH community. However, it will not lose its draft designation and watermark until it is approved by the designated decision authority.

5 Revising a Standard

A new version of an established NIH enterprise architecture standard must progress through the full NIH architecture standardization process as if it were a completely new specification. Once the new version receives the appropriate approvals, it will usually replace the previous version, which will be moved to historical status. The new version will retain the NIHRFC number of the previous version.

However, in some cases, at the discretion of the Chief Architect, both versions may remain as NIH enterprise architecture standards to honor the requirements of an installed base. In this situation,

the relationship between the previous and the new versions must be explicitly stated in the text of the new version.

6 Retiring a Standard

As technology changes and matures, it is possible for a new standard or specification to be so clearly superior technically that one or more existing standards or specifications for the same function should be retired. In this case or when it is felt for some other reason that an existing standard or specification should be retired, the ARB shall approve a change of status of the old specification(s) to "Obsolete." OCITA will allow for ten business days after notification to NIH stakeholders before classifying retired standards as "Obsolete." A request to retire an existing standard can originate from a domain team, an ad hoc working group, or another NIH stakeholder.

7 Obsolete Standards and NIHRFCS

A specification that has been superseded by a more recent specification or is for any other reason considered obsolete is classified as "Obsolete." Any stakeholder may recommend that an NIHRFC or standard be classified as obsolete.

OCITA will maintain an archive of obsolete NIHRFCs indefinitely on the NIH Portal. The NIH Portal is the authoritative source for obsolete NIHRFCs. However, a record of the obsolete NIHRFC will remain on the enterprise architecture website with the classification of "Obsolete." OCITA will annotate the obsolete NIHRFC with the reason it is obsolete and a citation for the mechanism, such as a new NIHRFC, that obsoletes it.

The decision authority for classifying a BCP or informational NIHRFC as obsolete is the Chief Architect, whose decisions may be appealed to the ARB for final disposition. The decision authority for NIHRFCs in the standards and governance sub-series is the ARB, whose decisions may be appealed to the ITWG. The final disposition of an obsolete NIHRFC should be communicated to the NIH enterprise architecture community and to the NIHRFC author.

8 Exceptions to the Architecture

Furthermore, business requirements and innovation sometime necessitate a temporary exception to the NIH Enterprise Architecture. In these situations, a stakeholder must submit an "Architecture Exception Request" to the Chief IT Architect in accordance with the process specified in NIHRFC0016, "Enterprise Architecture Exception Process." In this way non-standard technologies may be procured and implemented in the NIH information technology environment on a temporary and limited basis or until such time the procured technology can be incorporated as a standard, if NIH so chooses.

9 Conflict Resolution and Appeals

Disputes are possible at various stages during the standards process. To achieve the goals of openness and fairness, such conflicts must be resolved by a process of open review and discussion.

This section specifies the procedures that shall be followed to address standards issues that cannot be resolved through the normal processes whereby domain teams and ad hoc working groups and other process participants ordinarily reach consensus.

9.1.1 Domain Team and Ad Hoc Working Group Disputes

Any stakeholder may disagree with a domain team or ad hoc working group recommendation regardless of affiliation with the domain team or ad hoc working group. Disagreements may arise because a stakeholder feels his/her own views have not been adequately considered or the body has made an incorrect technical choice that places the quality or integrity of the bodies' products in significant jeopardy.

A person who disagrees with an architecture domain team or ad hoc working group recommendation shall always first discuss the matter with the architecture domain team's or ad hoc working group's chair(s), who may involve other members of the architecture domain team or ad hoc working group in the discussion.

If the disagreement cannot be resolved, any of the involved parties may notify OCITA. OCITA shall attempt to resolve the dispute.

If the disagreement cannot be resolved by OCITA any of the parties involved may then appeal to the ARB. The ARB shall then review the situation and attempt to resolve it in a manner of its own choosing.

The ARB decision is final with respect to the question of whether or not the standards processes have been followed and with respect to all questions of technical merit.

9.1.2 Process Failures

This document sets forward procedures to ensure openness and fairness in the standards process and the technical viability of the standards. OCITA is the principal agent of the NIH for this purpose, and it is OCITA that is charged with ensuring that the required procedures have been followed, and that any necessary prerequisites to a standards action have been met.

If an individual should disagree with an action taken by the OCITA in this process, that person should first discuss the issue with the Chief Architect. If the Chief Architect is unable to satisfy the complainant then the OCITA as a whole should re-examine the action taken, along with input from the complainant, and determine whether any further action is needed. The OCITA shall issue a report on its review of the complaint to the ARB.

Should the complainant not be satisfied with the outcome of the OCITA review, an appeal may be lodged with the ARB. The ARB shall then review the situation and attempt to resolve it in a manner of its own choosing and report to the NIH Chief Information Officer (CIO) on the outcome of its review.

If circumstances warrant, the ARB may direct that an OCITA decision be annulled, and the situation shall then be as it was before OCITA rendered the decision. The ARB may also recommend an action to OCITA or make other recommendations as it deems fit. However, the ARB may not preempt the role of OCITA by issuing a decision premature to OCITA's opportunity to render a decision.

The ARB's decision is final with respect to the question of whether or not the documented standards process has been followed.

9.1.3 Questions of Applicable Procedure

Further recourse is available only in cases in which the processes are claimed to be inadequate or insufficient to the protection of the rights of all parties in a fair and open process. Claims on this basis may be made to the IT Working Group (ITWG). The NIH CIO shall acknowledge such an appeal within 10 business days and shall at that time advise the petitioner of the expected duration of the ITWG's review of the appeal. The ITWG shall review the situation in a manner of its own choosing and report to OCITA on the outcome of its review.

The ITWG's decision upon completion of their review shall be final with respect to all aspects of the dispute.

9.1.4 Appeals Procedure

All appeals must include a detailed and specific description of the facts of the dispute.

All appeals must be initiated within two months of the public knowledge of the action or decision to be challenged.

At all stages of the appeals process, the individuals or governing bodies responsible for making the decisions have the discretion to define the specific procedures they will follow in the process of making their decision.

In all cases a decision concerning the disposition of the dispute, and the communication of that decision to the parties involved, must be accomplished within a reasonable period of time.

10 Standards and Specifications from non-NIH Organizations

To avoid conflict between competing versions of a specification, the NIH Enterprise Architecture community will not publish a standards sub-series NIHRFC for a standard or specification that is a prevalent government, departmental, or industry wide standard or specification.

However, a standards sub-series NIHRFC may specify a preferred NIH standard or specification, when such non-NIH standards are incompatible or a source of considerable risk or cost to NIH. Furthermore, NIH may publish an informational sub-series NIHRFC to increase awareness or generate discussion on a non-NIH standard or specification.

11 Notices and Record Keeping

Each of the domain teams, ad hoc working groups, and governing IT bodies involved in the development and approval of standards shall publish minutes from meetings in the NIH Enterprise Architecture community on the NIH Portal. OCITA shall be the enforcement body for this requirement.

OCITA will ensure that the following events are announced publicly via the NIH Enterprise Architecture LISTSERV and on the NIH Portal: convening of a enterprise architecture domain team or working group, publication of domain team recommendations, process approvals and disapprovals, and first and last call announcements for review as required for each of the NIHRFC sub-series.

OCITA shall publicly announce via the NIH Enterprise Architecture LISTSERV the ARB's pending consideration of an NIHRFC or other standard or specification. The announcement will include meeting details, an agenda, and any references (either attachments or public links) to ensure all NIH stakeholders are able to participate in the meeting.

The record of an organization's standards-related activity shall include at least the following:

- The charter of the organization (or a defining document equivalent to a charter);
- The minutes of meetings, which will include discussion topics, key decisions with justification, known assumptions; and
- Attendance records.

OCITA will assist, monitor, and enforce the maintenance and publication of NIH Enterprise Architecture standards process activities. However, each domain team, ad hoc working group, and governing body shall be responsible for maintaining their own minutes, communications, email lists, archives, etc. in the NIH Enterprise Architecture community on the NIH Portal.

12 Process Exceptions

If circumstances dictate, a stakeholder may request an exception to the processes outlined in this document. The ARB may grant a process exception, if it determines that the likely benefits to the NIH outweigh the costs of not following the standards process. The ARB may also accelerate or modify the process if the risks to the NIH, the public, or its partners are imminent. In exercising this discretion, the ARB shall consider:

- The technical merits of the standard;
- The justification for granting the process exception;
- The decision criteria considered in granting the process exception, including their relative weights;
- Alternatives to granting the process exception;
- The collateral and precedent setting effects of granting a process exception; and
- The risks associated with granting or not granting the process exception, including an assessment of the probability and impact of each identified risk.

The proposed process exception must include a problem statement, a specific reference to the process step or requirement to which the exception applies, and the results of the ARB's considerations referenced above. The ARB must provide for NIH-wide comment on the proposed process exception by announcing via the NIH Enterprise Architecture LISTSERV the meeting information, agenda, relevant references, the proposed specification or standard, and the proposed process exception.

13 Process Change Control

The scope of the process exception procedure is limited to a single standard or specification.

Substantive, permanent changes to the processes outlined in this document require the recommendation of either the Chief Architect or a member of the ARB. The recommended change shall be announced and posted for NIH-wide comment for no less than one calendar month. The ARB must consider all comments and recommendations in making the decision to modify this governing process.

The ARB is the decision-making governing body for changes to this process. However, a stakeholder may appeal the decision to the ITWG. The ITWG is the final authority on any changes to this governing process.

14 Intellectual Property Rights

Authors of NIH Enterprise Architecture standards or other content shall observe all laws governing intellectual property rights and shall credit all sources of intellectual property in all documentation or content and must compensate the intellectual property owner when necessary. This process is governed by the following requirements:

- Contributor(s) acknowledge that they grant an unlimited perpetual, non-exclusive, royalty-free, worldwide right and license to the NIH under any copyrights in the contribution. This license includes the right to copy, publish, and distribute the contribution in any way, and to prepare derivative works that are based on or incorporate all or part of the contribution, the license to such derivative works to be of the same scope as the license of the original contribution.
- The contributor(s) acknowledges that the NIH has no duty to publish or otherwise use or disseminate any contribution.
- The contributor(s) grants permission to reference the name(s) and address(es) of the contributor(s) and of the organization(s) he or she represents, if any.
- The contributor(s) represents that the contribution properly acknowledges major contributors.
- The contributor(s), the organization(s), if any, he or she represents and the owner(s) of any proprietary rights in the contribution, agree that no information in the contribution is confidential or proprietary and that the NIH and its affiliated organizations may freely disclose any information in the contribution.
- The contributor(s) represents that he or she has disclosed the existence of any proprietary or intellectual property rights in the contribution that are reasonably and personally known to the contributor(s). The contributor(s) does not represent that he or she personally knows of all potentially pertinent proprietary and intellectual property rights owned or claimed by the organization(s) he represents, if any, or third parties.
- The contributor(s) represents that there are no limits to the contributor's ability to make the grants, acknowledgments, and agreements above those that are reasonably and personally known to the contributor(s).

Where any patents, patent applications, or other proprietary rights are known, or claimed, with respect to any specification in the standards sub-series, and brought to the attention of the OCITA, the OCITA shall not advance the specification without including in the document a note indicating the existence of such rights, or claimed rights. Where implementations are required before advancement of a specification, only implementations that have, by statement of the implementers, taken adequate steps to comply with any such rights, or claimed rights, shall be considered for the purpose of showing the adequacy of the specification.

Where the OCITA knows of rights, or claimed rights, the Chief Architect shall attempt to obtain from the claimant of such rights, a written assurance that upon approval by the ARB of the relevant NIH architecture standards sub-series specification(s), NIH will be able to obtain the right to implement, use and distribute the technology or works when implementing, using or distributing technology based upon the specific specification(s) under openly specified, reasonable, non-discriminatory terms. The domain team proposing the use of the technology with respect to which the proprietary rights are claimed may assist the Chief Architect in this effort. The results of this procedure shall not affect advancement of a specification in the standards sub-series, except that the ARB may defer approval where a delay may facilitate the obtaining of such assurances. The results will, however, be recorded by the NIH Chief Architect, and made available. The ARB may also direct that a summary of the results be included in any published NIHRFC containing the specification.

15 Delegated Authority in the Standards Process

Individual(s) or organization(s) must not misrepresent any other individual(s) or organization(s).

16　Confidentiality

NIH Enterprise Architecture standards, best community practices, documentation, meeting minutes, discussions, communications, decisions, and all other content are a public record and shall not be afforded any level of confidentiality. The NIH General Counsel must approve exceptions to this requirement.

17　Acknowledgements

This document has extensively followed the model of IETF RFC 2026. It has been modified to make it applicable to the NIH architecture needs. We would like to acknowledge all of those who have contributed to the processes that develop NIH Enterprise Architecture Standards. The NIH architecture community hopes to follow the model of openness and fairness that IETF has established.

18 References

Clinger-Cohen Act 5125 (b)(2)
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Clinger-Cohen Act 5112 (d)
http://www.cio.gov/Documents/it_management_reform_act_Feb_1996.html

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http://www.acqnet.gov/far/current/html/Subpart%2011_1.html#wp1086821

NIHRFC0001. "Enterprise Architecture Standards Process." National Institutes of Health (March 2005).

NIHRFC0015. "Decision Criteria for Selecting NIH Standards." National Institutes of Health (September 2005).

NIHRFC0016. "Enterprise Architecture Exception Process." National Institutes of Health (October 2005).

19 Contact

For more information about the architecture processes described above or about any issues related to the NIH Enterprise Architecture, email OCITA at EnterpriseArchitecture@mail.nih.gov. Also, visit enterprisearchitecture.nih.gov to learn more about the NIH Enterprise Architecture, current architecture standards, and the processes described above.

To contact the NIHRFC Editor, send an email message to EnterpriseArchitecture@mail.nih.gov.

20 Security Considerations

This NIHRFC raises no security issues.

21 Changes

Version	Date	Change	Authority	Author of Change
0.0	August 12, 2003	Original Document.		Jack Jones
0.1	August 1, 2004	Changed website address.	Jack Jones	Steve Thornton
0.2	September 21, 2004	Major document revision (see NIH Portal for previous versions).	Jack Jones	Steve Thornton
0.3	November 19, 2004	-Minor text edits throughout. Clarified decision authority of Domain Teams. -Added section on Provisional Architecture Artifacts (new Section 5.6). -Change of author. -Added to definitions list.	Jack Jones	Steve Thornton
0.4	December 6, 2004	-Minor text edits. -Included requirement for author to include and brief concerning unresolved conflicts and decision analysis. -Described the process for NIHRFCs that have not been acted on in six months. -Further clarified announcement requirements to include the LISTSERV.	Steve Thornton	Steve Thornton

Version	Date	Change	Authority	Author of Change
0.5	January 21, 2005	-Defined specification and standard. -Removed provisional brick paragraph, since it does not prescribe a process different than a standards sub-series NIHRFC. -changed "published" to "post" as appropriate	Jack Jones	Steve Thornton
1.0	March 9, 2005	-Changed process goal (section 1.2) from "prior implementation and intent" to "adoption of proven technology in the NIH environment." -added requirement for OCITA to annotate obsolete NIHRFC with reason and citation. -incorporate requirement for OCITA to announce publication of domain team recommendations	Architecture Review Board (3/9/2005 meeting)	Steve Thornton

Version	Date	Change	Authority	Author of Change
1.1	July 17, 2006	-Updated header information. -Updated section and paragraph numbers. Updated table of contents. -Moved "Definition of Terms" section to Appendix B. -New sections 3 "Decision-making for Standards." -New section 4 "Exceptions to the Architecture." -New section 8 "Governance (GOV) Process." -New section 18 "References." -New section 19 "Security Considerations" -New section 20 "Contact." -New section 6.3 "Governance Sub-series Process." -Section 6.5 – Clarified when the NIHRFC number is added to the document. -Section 7.1 – Added requirement that standards documents must include a purpose and expected outcome. -Copy-edits.	Helen Schmitz	Steve Thornton
1.2	August 10, 2006	-Changed NRFC acronym to NihRFC.	ARB	Steve Thornton

Version	Date	Change	Authority	Author of Change
1.3	April 6, 2007	-Reordered paragraphs. -Incorporated changes from Chief Architect. -Removed "Experimental" sub-series. -Removed "Notices" section. -Revised and condensed RFI section. -Revised and condensed "Intellectual Property Rights" section. -Removed "Determination of Reasonable and Non-discriminatory Terms" section. -Changed NihRFC acronym to NIHRFC.	NIHRFC0001 and Helen Schmitz, Acting NIH Chief Architect	Steve Thornton
1.4	May 15, 2007	-Expanded FAR citation 11.105 -Removed sub-series numbering system and replaced with sub-series "category labels" throughout document.	NIHRFC0001	Steve Thornton
2.0	May 29, 2007	-Clarified that this document governs architecture standards, not all IT standards, within the document abstract. -Prior revisions approved and document baselined.	Architecture Review Board (5/23/2007 meeting)	Steve Thornton

Version	Date	Change	Authority	Author of Change
2.1	April 21, 2008	-Added the following language in several sections: "NIHRFC authors are required to respond to each discussion comment on the NIH Portal to ensure that all stakeholders' concerns can be incorporated into the document to the extent possible." - Added a requirement that OCITA announce EA domain team and working groups to the EA Listserv.	Architecture Review Board	Steve Thornton

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Appendix A: Acronyms

ANSI: American National Standards Institute
ARB: Architecture Review Board
BCP: Best Community Practice
CIO: Chief Information Officer
IC: Institutes and Centers
IETF: Internet Engineering Task Force
IT: Information Technology
ITMC: Information Technology Management Committee
ITWG: Information Technology Working Group
PDF: Portable Document Format
OCITA: Office of the Chief Information Technology Architect
NIHRFC: NIH Request for Comments

Appendix B: Definition of Terms

Ad Hoc Working Group - a group chartered by the Chief Architect to work on a specific specification, set of specifications, or topic that falls outside of the NIH Architecture Taxonomy.

Architecture Review Board (ARB) - an appointed group chaired by the NIH CIO that assists in the management of the enterprise architecture standards process. The ARB is responsible for the governance of the NIH Enterprise Architecture and is the standards approval board for it.

Brick - physical building block of the architecture that specifies the technology or technologies to be used in the architecture.

Domain Team - a group chartered by the Chief Architect for the specific purpose of formulating principles, standards, artifacts, and recommendations for the areas of the NIH Enterprise Architecture specified in the taxonomy.

Information Technology Management Committee (ITMC) - established by the NIH CIO. Composed of the senior IT officials from each IC, the ITMC advises the NIH CIO on IT management and planning and serves as a communication vehicle between the IC and the CIO on IT issues. Its purpose is to: (1) communicate each ICs needs and range of interests in IT to the CIO and among the IC community so that enterprise IT solutions can be developed and managed to best serve the NIH scientific and administrative missions; (2) effectively communicate ITMC policy and architectural recommendations to the ICs; (3) provide a central point of reporting and coordination for the activities of NIH IT committees and working groups; (4) establish a forum that effectively integrates the unique needs and operations of the program/business process and IT technical communities; (5) provide the CIO with the IC perspective on issues/solutions that involve the management and implementation of NIH IT programs; and (6) serve as the intermediate link between the IT subcommittees and the NIH CIO.

Information Technology Working Group (ITWG) - formerly the IT Board of Governors (ITBOG); established by the NIH Director as an advisory group to the NIH Director and CIO on IT issues and oversight of IT management at NIH. The Board's purpose is to (1) review and make recommendations on the IT activities and priorities of the NIH and (2) assess and advocate resources to implement those priorities.

Interoperable - the ability to interoperate over a data communications path.

ITMC Enterprise Architecture Subcommittee - established by the ITMC; provides the NIH and IC CIOs a forum for participation, leadership, and direction on the NIH Enterprise Architecture; works closely with the NIH CIO, the Chief Architect and the ARB to help develop NIH-wide and enterprise architectures that reflect the business and technology drivers of NIH and its constituent IC's. It is responsible for providing guidance and IT input into that process.

Office of the Chief Information Technology Architect (OCITA) - the office led by the Chief Architect that is chartered as the custodial body of the NIH Enterprise Architecture and the processes that govern it.

Pattern - a logical model of technology; a design idea that can be reused and leveraged across the enterprise.

Principle - a high level statement of a fundamental value that guides Information Technology (IT) decision-making and activities, which can then be consistently planned, implemented and maintained.