

**buildingSMART alliance &
The Open Geospatial Consortium (OGC)**

Technology Office
4899 North Old State Road 37
Bloomington, IN 47408
Telephone: +1-812-334-0601
Facsimile: +1-812-961-2053
Email: techdesk@opengeospatial.org

**Request for Quotation
And
Call for Participation (RFQ / CFP)
AECOO Testbed – Phase 1
(AECOO-1)**

buildingSMART alliance Project 2008-STP-01

Copyright © 2008, Open Geospatial Consortium, Inc. and buildingSMART alliance All Rights Reserved.

To obtain additional rights of use, visit <http://www.opengeospatial.org/legal/>.

Warning

This document is not an OpenGIS® or buildingSMART/NBIMS standard. However, the work arising from this document could very well lead to the definition of standards. This document is a request to the global community for involvement in a testbed that is part of a joint initiative of the buildingSMART alliance and the Open Geospatial Consortium, Inc (OGC). It is subject to change without notice and may not be referred to as a standard.

Some of the elements of this document may be the subject of patent rights. The OGC and buildingSMART shall not be held responsible for identifying any or all such patent rights. Recipients of this document are invited to submit, with their responses, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Certain trade names or company products are mentioned in this document. Trade names are used to specify adequately the scope of interest and the technology challenges. In no case does such identification imply endorsement by the OGC, buildingSMART alliance, Alliance Partners, or the Sponsors of the AECOO Testbed, nor does it imply that the product is the best available for the purpose.

RFQ Issuance Date: May 2, 2007

Proposal Due Date: May 30, 2007

Table Of Contents

1	Introduction.....	1
1.1	Purpose.....	1
2	RFQ / CFP Organization and Background.....	2
2.1	How to Read This Document.....	2
2.2	OGC's Interoperability Program.....	3
2.3	Adapting OGC's Interoperability Program for buildingSMART Standardization.....	3
2.4	The RFQ / CFP Process	4
2.5	Funding for Threads.....	4
2.6	Benefits to Participants	5
3	AECOO-1 Context.....	5
3.1	buildingSMART alliance, buildingSMART International and The Open Geospatial Consortium (OGC).....	5
3.2	Operational Context	5
3.3	Technical Context	6
3.4	System Context	6
4	Participant's Role in AECOO-1	6
5	Proposal Submission Information	7
5.1	General Terms and Conditions	7
5.2	Submission Instructions	7
5.3	How to Submit	7
5.4	Questions and Clarifications	7
5.5	Reimbursements.....	8
5.6	Master Schedule.....	8
6	Proposal Format and Content	8
6.1	Proposal Outline.....	8
6.2	Technical Proposal - Cover Page	9
6.3	Technical Proposal - Overview	9
6.4	Technical Proposal - Proposed Contribution	9
6.5	Technical Proposal - Contribution Cross Referenced To WBS.....	11
6.6	Technical Proposal - Operational Software Maturation Plan	11
6.7	Cost Proposal - In-Kind Contributions	11
6.8	Cost Proposal - Cost-Sharing Request.....	11
7	Evaluation Criteria	11
7.1	Technical.....	12
7.2	Management.....	12
7.3	Cost	12

Annex A: AECOO-1 Management and Business Overview (Part A) & Work Breakdown Structure and Work Items (Part B)

Annex B: AECOO-1 Testbed Architecture

1 Introduction

1.1 Purpose

The buildingSMART alliance and The Open Geospatial Consortium (OGC®) have released this Request for Quotation (RFQ) / Call for Participation (CFP) in order to solicit proposals in response to a refined set of requirements for the AECOO Testbed – Phase 1. This request is issued as an RFQ / CFP for two reasons. The first reason is that buildingSMART alliance and OGC (in collaboration with a group of sponsors) is providing cost-sharing funds to partially offset expenses uniquely associated with the initiative. The second reason is that this testbed can involve as many participants as possible and thus is soliciting contributory proposals that will enhance and/or make use of the initiative outcomes.

The Sponsors of the AECOO-1 Testbed¹ are:

Architecture Firms: HOK, Burt Hill and Ellerbe Becket

General Contractors: Webcor and Gilbane

Government Agencies: US General Services Administration and Statsbygg (Norway)

Trade Associations: American Institute of Architects and Large Firm Roundtable

Alliance Partners² for AECOO-1 are:

buildingSMART International

US National Institute of Standards

Associated General Contractors of America

International Code Council

Construction Specification Institute

The testbed's overall aim is to foster business transformation³ as defined in the United States National Building Information Modeling Standard, Part 1⁴ (NBIMS) with technology for interoperability involving intelligent building models with 3D geometric capabilities. Business and communications, cost estimating and energy analysis issues are considered as they relate to planning and design for a capital facility. These three topic areas were selected by the Sponsors to focus attention on defining workable information solutions and services for information visualization and sharing.

¹ The sponsorship window remains open for Thread 3 (See Section 1.5). Organizations wishing to discuss sponsoring should contact OGC or buildingSMART alliance. Initiative Sponsors, contribute resources – funding, personnel, and facilities. Sponsors specify interoperability requirements to advance testbed objectives including the development of use cases, technology objectives, and schedule.

² Alliance Partners are organizations that contribute resources and relevant documents towards advancement of testbed goals and have reciprocal standards roles across the community.

³ Transformation covers changes in the way owners think about management of real property, how project teams are organized, and shorter delivery cycles with higher expectations for efficiency and quality.

⁴ Available at: http://facilityinformationcouncil.org/bim/pdfs/NBIMSV1_p1.pdf

OGC and buildingSMART alliance believe OGC's Interoperability Program and its methods for defining market driven interoperability solutions through global IT standards can positively influence technical content processes that hinder the industry's efficiency and growth and thereby induce market transformation. For more information about the links between open standards and commercial solutions, the reader is encouraged to review Annex A, Part A of the RFQ / CFP.

The AECOO Testbed – Phase 1 ignites an iterative, sequential open standards engine for the AECOO community. Testbeds are short-term, intensive, multi-participant "spiral engineering" activities to develop, test, and promote the use of open standards for building information and related software technologies. This and future activity is designed to be iterative and to build on accomplishments of past work completed by previous testbeds, and infused from projects now underway under the umbrella of buildingSMART alliance, buildingSMART International and research accomplishments from industry and academia.

The interoperability requirements presented in this RFQ / CFP are based upon a collaborative efforts between Sponsors of the AECOO Testbed – Phase 1 (AECOO-1), OGC's Interoperability Program Team (IPTeam), and buildingSMART alliance staff. The IPTeam used results from previous and ongoing OGC Interoperability Program initiatives, the AECOO Testbed Request for Technology, output from buildingSMART alliance and buildingSMART International activities, publicly available documentation from related standards initiatives, and elsewhere.

Both buildingSMART International and the National Institute of Building Sciences (NIBS) has active agreements with the OGC. The knowledge and recommendations coming from the AECOO Testbed will be provided back to BuildingSMART International and the National Building Information Model Standard/buildingSMART alliance housed within NIBS. Coordination between other standards and trade organizations will take place through out the testbed process.

2 RFQ / CFP Organization and Background

2.1 How to Read This Document

This part of the RFQ / CFP provides a high level framework of the testbed. The testbed's Master Schedule is included in this part. Instructions and requirements about how to submit a response are defined, as well as evaluation criteria.

Annex A of the RFQ / CFP is focused at the Executive, Senior Management and Technical Management levels. Annex A provides potential respondents with information to determine their interest in participating. Annex A is divided into two parts.

- Part A provides the underlying foundations for open standards for both information and communication in the AECOO community. Part A also presents a business centric discussion of the topics to be addressed in the testbed, as well as a summary of responses received from the Request for Technology that was published in February 2008.
- Part B presents the Work Breakdown Structure for the Testbed. This part provides all potential respondents with tasks and activities that will happen during the testbed and will enable those potential respondents to understand what levels of effort should be budgeted. Part B and Annex B are related.

Annex B of the RFQ / CFP defines the AECOO-1 Testbed Architecture. This Annex is directed to software product development teams, software engineers, systems architects, and rich Internet application developers. Annex B contains seven sections as generally defined below:

- Section 2 provides an overview of the AECOO-1 development threads

- Section 3 presents the technology standards baseline for AECOO-1
- Section 4 discusses architectural approaches and patterns
- Sections 5-7 present requirements for each of the Testbed's development threads

2.2 OGC's Interoperability Program

The OGC operates an Interoperability Program that is a global, hands-on and collaborative rapid prototyping program designed to develop and deliver proven candidate specifications into OGC's Specification Program that can then be formalized for public release as open standards. Feedback is also provided to partner standards bodies. In OGC's Interoperability Initiatives, international technology developers and providers team together to solve specific geo-processing interoperability problems posed by the initiative's sponsoring organizations. OGC Interoperability Initiatives include test beds, pilot projects, interoperability experiments, and interoperability support services – all designed to encourage rapid development, testing, validation and adoption of open, consensus based standards specifications.

2.3 Adapting OGC's Interoperability Program for buildingSMART Standardization

The buildingSMART alliance and OGC have agreed to use the Interoperability Program approach to encourage broad international participation on well-defined sets of AECOO community problems. The buildingSMART International organization is using this opportunity to familiarize itself with how testbeds operate and to evaluate the applicability of these processes to their organization.

It is expected that testbeds dealing with AECOO requirements will yield accelerated alignments of industry on open standards solutions. The AECOO Testbed, more than anything else, is positioned to help the AECOO community understand how to plan and conduct successful standards development using market driven approaches; to bridge cooperation among and between standards bodies whose mission crosses boundaries for information sharing and dissemination; and to achieve outcomes greater than what can be achieved alone.

OGC's goal is to develop joint initiatives with the AECOO community because we believe collectively we all can be more efficient in the future in jointly addressing issues of geospatial and AEC information convergence.

Testbeds are a way to encourage broad international participation on well-defined sets of problems. AECOO Testbeds run on functional requirements that the Sponsors wish to see the vendor community address from an interoperability standpoint. The AECOO Testbed directly addresses several key interoperability issues defined as important to the industry. In this testbed, the sponsors have requested we begin to build out the communications foundation that underlies the BIM concept. This testbed will exercise IFC (Industry Foundation Classes) information model, IDM (Information Delivery Manual) and MVD (Model View Definitions) information practices.

Service interfaces will be collaboratively designed and shown to work using IFCs to articulate BIM-centric messaging between stakeholders in the AECOO community dealing with building lifecycle activities. Specific areas of work this Testbed will focus on includes:

- Decision support across energy and costing business practice
- Prototype cost estimation using Quantity Takeoffs
- Prototype energy analysis

- Design intent for building performance and constraints

Detailed industry response to a previous Request for Technology (RFT) during the Concept Development phase of the AECOO-1 Testbed indicates clearly that the market desires to change the ways they wish to scale and collaboratively interoperate. Pre-web techniques the support information interaction and sharing do not scale. The means bridge the gap and share information using interoperable building systems processes begins at the level of information architecture.

The policies and procedures that will be followed for AECOO-1 are available here:

<http://www.opengeospatial.org/about/?page=ipp>

2.4 The RFQ / CFP Process

The AECOO-1 Management Team (consisting of OGC, buildingSMART alliance and the sponsors) has established specific testbed requirements along with an initial Testbed Architecture (see attached Annex B) for the initiative. This initiative is divided into three threads. A set of sponsor requirements, a Work Breakdown Structure (WBS) intended to achieve those requirements and how these requirements will be phased are presented in Annex A, Part B.

This RFQ / CFP is being made available to every organization and person with expertise in the building information management field. Broad participation is encouraged in order to achieve buildingSMART alliance's and OGC's interoperability objectives on a voluntary basis. Specifically, all organizations are invited to contribute to the design of the capabilities identified in the effort and explore architectural alternatives, performance characteristics, and ease of application development as direct input into the technology development activity. Participants will also be asked to examine the probable direction of the industry, propose evolutionary (or revolutionary) models for interoperable information services, and identify associated alternatives for study during the course of the initiative.

All organizations interested in participating in the Testbed effort shall respond with a proposal. Instructions for submitting proposals are provided in Section 4. Annex A provides requirements and the WBS to guide organization's decisions about what thread(s) to choose and the structure of responses. As part of the testbed process, limited cost-sharing funding is available and is intended to help partially offset engineering costs incurred by participants in support of this effort. **No funds shall be used to procure any proprietary hardware or software associated with this effort.**

Each organization with a role in the testbed shall sign a Participation Agreement that includes a statement of work (SOW) or a statement of participation (SOP) with OGC that outlines roles and responsibilities of each participant. By doing so, participants will agree to work together for the realization of the AECOO initiative goals and for the benefit of the industry. Draft versions of the SOW and SOP will be made available to all interested parties. The last date of submission of SOP is the first day of Kickoff Meeting as indicated in the Master Schedule (Section 4.6).

2.5 Funding for Threads

In this initial Testbed, Sponsors seek to advance standards in the following areas:

1. Quantity Takeoff for Cost Estimation (QTO)
2. Building Performance and Energy Analysis (BPEA)
3. Communications, Project Delivery, and Decision Support (CPD)

Sponsorship funding is in place for Threads 1 and 2. Thread 3 is partially funded, however the Management Team anticipates acquiring additional sponsors to activate this Thread as part of

AECOO-1. The deliverables listed in Annex A, Part B reflect this condition. We therefore encourage responses to all above mentioned threads.

Organizations that might consider sponsoring this thread should contact OGC or buildingSMART alliance.

2.6 Benefits to Participants

The AECOO-1 Testbed provides a lucrative business opportunity for vendors, users, and other interested parties to mutually define services, interfaces and protocols (as Engineering Reports) in the context of a hands-on engineering experience expected to shape the future of Building Information Modeling (BIM) software development and related data publication.

AECOO-1 sponsors are supporting this vision with cost-sharing funds to partially offset development costs associated with developments of capabilities to provide and demonstrate interoperable information services. This offers OGC and all buildingSMART members (alliance and International) a unique opportunity to recoup a portion of their expenses related to the AECOO-1 Testbed. Additionally, this effort has well-defined objectives, while providing a significant opportunity to explore alternatives in a unique hands-on engineering context.

3 AECOO-1 Context

The initiative sponsors and OGC have worked to outline specific functional requirements that represent information user requirements for several sets of activities that are part of the building life cycle. Fundamental among these requirements is the basic need for interoperability between software components in multi-vendor settings. The high-level objectives of this effort are three-fold:

- (1) Focus on common architecture for information services,
- (2) Harmonize and mature certain information specifications in line with the common architecture, and
- (3) Support the development of buildingSMART interoperability reference implementations within the architecture that meet sponsor application requirements.

Realizing the last objective is achieved by documenting the interfaces, protocols, harmonized information models, information processing best practices and lessons learned in using them in the construction of demonstrations.

3.1 *buildingSMART alliance, buildingSMART International and The Open Geospatial Consortium (OGC)*

The proposing organization must be a member of OGC, or buildingSMART alliance or International (including any other regional chapter), and be familiar with OGC's and buildingSMART's mission, organization, and processes. Proposals from non-members of these organizations will be considered, if a completed application for membership or a letter of intent to become a member of either organization is submitted prior to or along with the proposal. OGC and buildingSMART alliance staff will be happy to field your questions on the benefits each organization offers.

3.2 Operational Context

The use cases provided in Annex B describe activities and information exchanges to be demonstrated in the testbed. The specific scenario that will be used in the demonstration effort will be developed

over the course of testbed execution as a draft Demonstration Concept that will exercise participant solutions that address requirements as provided in Annexes A and B.

3.3 Technical Context

The AECOO-1 RFQ / CFP addresses the first phase of a longer-term activity directed towards identifying and developing consensus-based open standards for use in broadly based building and capital facilities life cycle processes. Participants in this testbed will implement some of the software components in the use cases provided in Annex B. Other than the architecture described in Annex B, participants will have flexibility in designing the interoperable interfaces and protocols for use in the demonstrations associated with the operational context. Specific technical requirements and deliverables are provided Annexes A and B.

The service requirements addressed in this RFQ / CFP are prioritized according to sponsor commitments for funding activities. Priority service and information modeling requirements are identified in Annex A.

The OGC portal provides an online Glossary of Terms at the following URL that may be useful to aid in understanding and interpretation of terms and abbreviations contained throughout this RFQ:

<http://www.opengeospatial.org/resources/?page=glossary>

We also provide a glossary of buildingSMART terms and definitions are provided at:

<ftp://ftp.opengis.org/pub/aecoo-08/>.

The ftp library is organized by categories and comprises 19 folders. The glossary is located within BIM – GENERAL Folder and titled “BuildingSMART_Glossary_V05.pdf.

3.4 System Context

The architecture presented in Annex B is based on the current “mainstream” approach for file and REST-based services. These architectural patterns were selected to provide the best opportunity for meeting the sponsors’ requirements. This architecture is not intended to drive the physical system configuration, but to identify the interfaces and protocols within the current mainstream approach for sharing information and information processing resources. For example, details of the initial interfaces and protocols and how they are distributed across physical systems in the initiative are not included in the Architecture – those decisions will be left to the participants.

4 Participant’s Role in AECOO-1

There are several possible roles that organizations may play in the testbed. These are:

- Developer of one or more software components implementing interfaces and protocols agreed in the early stages of the initiative for one or more of the services described in Annex B,
- Developer of demonstrations and tests of the implemented software components, and/or
- Provider of data, personnel, software, hardware, or facilities that will contribute to the overall success of the initiative.

Participants should propose specifically against the Work Items (Threads) provided by the sponsors (see Annex B), but may go beyond that request and propose in-kind contributions, if they support other sponsor related aspects of the problems.

5 Proposal Submission Information

5.1 General Terms and Conditions

Documentation submitted in response to this RFQ / CPF will be distributed to members of AECOO-1 Management Team. Submissions will remain in the control of this group and will not be used for other purposes without prior written consent of the proposing organization. Please note that you will be asked to release the content of your proposal (less financial details) once you agree to participate in the testbed effort. Proprietary and confidential information must not be submitted under this request (See Section 6.1 for further information).

Participants will be selected to receive cost sharing funds based on adherence to the requirements stipulated in this RFQ / CFP and the overall quality of their proposal. The primary objective of AECOO-1 Sponsors is to use cost sharing funds to promote the development of open consensus standards based on successful implementation and demonstration. We encourage respondents to exploit the results of innovative R&D efforts, but the objective is operational implementations that support the standards. Respondents are asked to define the migration path for producing operational solutions. Those proposing organizations not selected for cost sharing funds are encouraged to participate in AECOO-1 on an in-kind basis. Each participant will be required to enter into a contract with OGC. This agreement will define participant responsibilities, and by signing the contract, all participants will agree to work together towards the common goals of the testbed.

5.2 Submission Instructions

Submissions to this request shall be “complete”; i.e., your submission must provide all information requested in Section 6 to be considered further. Submissions shall use the response template provided in the RFQ package. The submission shall consist of a technical volume and a cost volume. An outline with page limits is provided in section 5.1. Reviewers will be instructed to not read or evaluate any materials in excess of the page limits. Each requirement set description shall begin on a new page.

5.3 How to Submit

Submit an electronic copy of your proposal to the OGC Technology Desk (techdesk@opengeospatial.org). Microsoft Word® 2000 for Windows, 2001 for Macintosh or higher format is preferred; however, Portable Document Format or Rich Text Format is acceptable.

Proposals must be received at OGC on or before the date in the AECOO-1 Master Schedule (Section 4.6).

5.4 Questions and Clarifications

Questions and requests for clarification should be sent electronically to the OGC Technology Desk (techdesk@opengeospatial.org), by mail to the address in section 5.3, or by facsimile transmission (+1 812-961-2053). All clarifications will be posted to the AECOO-1 WWW Site (<http://www.opengeospatial.org/projects/initiatives/aecoo-1rfq>) to the OGC Technical Committee electronic mail reflector and buildingSMART alliance listserv. **Questions can be submitted at any time, but must be submitted before the date in the AECOO-1 Master Schedule (Section 4.6).**

Bidder's Conference

OGC and buildingSMART alliance will hold a to be scheduled telephonic bidder's conference during the response period. An announcement of the date and time will be made via clarification.

5.5 Reimbursements

The OGC will not reimburse submitters for any costs incurred in connection with preparing proposals in response to this RFQ / CFP.

5.6 Master Schedule

The following table details the major events associated with this RFQ:

AECOO-1 Activity	Date	Location	Notes
RFQ / CFP Issued	May 2, 2008	NA	
Questions	Questions can be submitted at techdesk@opengeospatial.org		Questions can be posed at any time by respondents
Bidders' Conference	CHECK WEB SITE	Teleconference	Bidder's Conference Date and Time will be announced via Clarification
Clarifications Posted	CHECK WEB SITE	Web and Email	
RFQ Responses Due	May 30, 2008 5:00 PM EDT	NA	Electronic Submissions Requested
Kickoff Meeting Mandatory	Monday June 30 to Thursday July 3, 2008	Washington, DC	Monday 0900 start for all Participants and Sponsors
Optional Physical Attendance - Interim Milestone Meeting (1)	September 15 – September 19, 2008	Atlanta, GA	One day meeting during the week – OGC TC Meetings
Optional Physical Attendance - Interim Milestone Meeting (2)	December 9-12, 2008	Washington, DC	One day during the AEC-ST Fall event
Demonstration and Final Delivery	Week of January 26, 2009	TBD	Deadline for all deliverables

6 Proposal Format and Content

6.1 Proposal Outline

Technical Proposal and Cost Proposals are to be submitted as separate volumes. As part of this RFQ / CFP archive you will find two templates: an MSWord Technical Proposal submission template and an xls spreadsheet with two cost workbook templates. Proposing organizations shall use these templates in preparing their proposals. The proposal should follow the outline:

Technical Proposal

- Cover page
- Overview (Not to exceed two pages; will not contribute to technical evaluation)
- Proposed contribution (Basis for Technical Evaluation)
 - Quantity Takeoff and Cost Estimation (QTO)
 - Building Performance and Energy Analysis (BPEA)
 - Communications, Project Delivery, and Decision Support (CPD)
- Proposed contribution cross referenced to WBS (Contributes to Management Evaluation)
- Facilities
- Hardware
- Software
- Operational Software Maturation Plan (Not to exceed 2 pages)

Cost Proposal

- Cost sharing request (Excel template for reporting costs is archived with the RFQ)
- In-Kind contributions (Excel template for reporting in-kind contributions is archived with the RFQ)

The Technical and Cost Proposal Sections are described below.

6.2 *Technical Proposal - Cover Page*

Provide the name(s) of the proposal submitter(s) and point of contact information. Teams should list all teammates and point of contact information for each. When submitting point of contact information, please provide both a business/financial and technical point of contact.

6.3 *Technical Proposal - Overview*

Provide an introduction to the contents of your proposal and its benefits.

6.4 *Technical Proposal - Proposed Contribution*

Describe your proposed contribution to the initiative based on your desired role (consistent with the Testbed Architecture (Annex B). The AECOO-1 emphasis is on interoperable solutions to the sponsors' functional requirements and your RFQ response should be developed from that perspective.

6.4.1 *Technical Proposal - Specification Development*

If you plan to contribute or support the development of interoperability specifications for interfaces, operations, encodings, messages, or other relevant technologies, please include the following in your proposal:

- (1) Your views on the Architecture, as expressed in Annex B.
- (2) Suggested modifications/additions you would recommend to pursue during AECOO-1,

- (3) A list of personnel and brief summary of their qualifications to carry out these tasks, and
- (4) Role and Responsibilities of your technical representative e.g., Engineering Report author, schema editor, model designer, or technical contributor. Technical contributors shall write or design subsets of the specification. Everyone is expected to review work in progress.

6.4.2 Technical Proposal - Component Development

If you plan to contribute to the development of components within the Testbed Architecture, please include in your proposal as much detail as possible concerning the operating system, hardware, programming language, and proprietary software requirements or constraints that relate to your proposed development effort. Please provide the migration path for proposed components.

Proposing organizations are encouraged to develop a server component and a client component that exercises the functionality of the server(s) being provided.

If you wish to provide a candidate starting point (i.e., an interface or protocol definition) for any of the cases in which you propose to have a role, please contribute this with your proposal.

6.4.3 Technical Proposal - Demonstration or Test Development

If you are proposing to develop demonstrations or tests, please provide as much detail as possible concerning your proposed effort. Delineate aspects of the use cases to which you believe you can contribute. In particular explain how your work will show the sponsor's desired level of interoperability.

Do not assume a single vendor demonstration; rather the demonstration will be showing how your technology can interoperate with other participant's technology.

6.4.4 Technical Proposal – Data and Building Models

If you are proposing to contribute data, building models, energy related analysis data, general cost information, space data, enclosure information and properties, etc. to the effort, please indicate the format of the data (if applicable) and any proprietary software access requirements (if applicable). Please include the geographic coverage of the data, a thematic description of the data, and any other relevant metadata. Please also indicate alternate formats or access capabilities that you are willing to support, if necessary. Match your data contribution with a use case in Annex B.

6.4.5 Technical Proposal - Personnel

If you are proposing to contribute personnel to the initiative, please indicate the capabilities and experience of the personnel, location and mobility information (in other words, will the personnel need to remain at their present location? Will you support travel?). Indicate which personnel would be able to participate in kickoff activities and other testbed site activities.

6.4.6 Technical Proposal - Facilities

If you are proposing facilities, please include as much detail about the configuration of hardware and software at the facility, the network access and restrictions (if any), and the level of operational support in place at the facility. Please provide information about your organizational approach to configuration management.

6.4.7 Technical Proposal - Hardware

If you are proposing to contribute hardware to the effort, please include a complete description of the hardware.

6.4.8 Technical Proposal - Software

If you are proposing to contribute software to the effort, please include a complete description of the software. You must include information about the operating environments that you intend to support in the context of the testbed.

6.5 Technical Proposal - Contribution Cross Referenced To WBS

Review the WBS found in Annex A and map your proposed contribution to the task categories and items found there. Indicate which requirements and what deliverables are being met with your contributions in the descriptions of activities that your organization proposes to undertake.

6.6 Technical Proposal - Operational Software Maturation Plan

If you are proposing in the technical volume to provide either software components that are enhancements of your existing product line or entirely new products that exercise the specifications developed or enhanced during the course of this initiative then you must provide an Operational Software maturation plan. This plan shall identify the product in question, the specifications exercised by the product and the anticipated date of public availability of the product.

6.7 Cost Proposal - In-Kind Contributions

Please provide an indication of the in-kind contributions that your organization will make to the AECOO-1 Testbed. This should reflect such contributions as labor, equipment, software, or data. Use the attached in-kind contribution template to itemize the contributions being provided. The sponsors and OGC will use this information in the development of future initiatives. This should be included in the section beginning with Level of Effort Estimate.

6.8 Cost Proposal - Cost-Sharing Request

This section is *required* only from proposing organizations requesting cost sharing funds. Please provide a requested amount of cost-sharing funds (in US Dollars) and provide details of the costs that are being offset (e.g., labor category, number of hours, and hourly rate). Note that the sponsors intend to provide cost-sharing funds for only those activities uniquely attributable to initiative participation; e.g., a recipient should not request funds to offset costs that would have otherwise been incurred and funded through some other source such as internal research and development funding. This section must include a certification that the proposed reimbursable costs would not be otherwise incurred in support of non-Testbed activities. Use the attached cost-sharing template to itemize the costs being offset. This should be included in the section beginning with Level of Effort Estimate.

7 Evaluation Criteria

Responses will be evaluated according to criteria set by the Sponsors. Those criteria can be divided into three areas: Technical, Management, and Cost.

7.1 Technical

The Technical criteria are described below.

- All applicable Requirements in the RFQ are addressed in the proposal
- Proposal provides risk-adjusted technical approach in support of the requirements
- Creativity and originality in the proposed solutions
- Proposed solutions could be executed within available resources
- Proposed Solutions are directed to achieve the goals set forth by AECOO-1 Testbed

7.2 Management

- Proposal adheres to and addresses all elements of Work Breakdown Structure
- Willingness to share information and work in a collaborative environment
- Achieves Sponsors' goals of enhancing availability of Standardized COTS or standards-based open source products in the market place

7.3 Cost

- Cost-share request is reasonable for proposed effort
- In-kind contribution is of value to the AECOO-1 Testbed