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**Request For Quotation
And
Call For Participation
In the
OGC Emergency Mapping Symbolology (EMS-1) Initiative**

**Annex C
Concept of Operations**

RFQ Issuance Date: 19 November 2003

Proposal Due Date: 16 December 2003

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Annex C: EMS-1 Concept of Operations

1 Introduction

This Annex describes the concept of operations for the OGC EMS-1 project. This document is organized around eight particular time frames or phases.

- **Proposal Development (11/19/03 – 12/16/2003)** —RFQ respondent proposals will be developed. This time will also be used by the OGC to develop draft management and communication plans for the initiative operational phases. *Proposals Due to OGC Technology Office Noon EST 12/16/2003*
- **Response Evaluation (12/16/2003 – 12/19/2003)** —RFQ responses will be reviewed. The initiative design will be solidified, the initiative architecture¹ will be refined, and a demonstration concept will be determined. *There will be a Sponsor meeting and final review 12/19/2003*
- **Participant Negotiations (12/19/2003)** —OGC will communicate with RFQ respondents concerning their proposals, to negotiate with them on their initiative participation, and to communicate the status of EMS-1 to the OGC Technical and Planning Committees. During this time, purchase orders for targeted participants and Memoranda of Understanding will be signed.
- **Initiative Kick-off (12/22/2003)** —Initiative operation begins with a teleconference kick-off meeting. This phase is covered specifically during the period of performance of this RFQ.
- **Pilot Development (12/22/2003 – 03/26/2003)** —Development of the pilot implementation and integration of selected components of that capability to form prototypes. This phase is covered specifically during the period of performance of this RFQ.
- **Technology Transfer (03/29/2003 – 3/31/2003)** —Results of the EMS-1 project development will be transferred to the OGC and sponsors, and the sponsor's communities. A technology transfer session may be held with the sponsors in which training on the prototype components will occur. This phase is covered specifically by this RFQ.

The details of each phase are fully explained in this Annex.

2 EMS-1 Lifecycle Phases

2.1 Proposal Development

The RFQ and Responses—The primary activity during this period is the development of proposals. Proposals should reflect an understanding of the following:

- Proposing organizations must be members of OGC, or must include an application for membership with their proposal, to have their proposals considered.
- The OpenGIS Abstract Specification as well as OpenGIS Interface Specifications will cover many of the technology areas under consideration in the RFQ. The relationship between the content of the proposal and the relevant OpenGIS specifications should be noted by the proposing organizations.
- Proposals with some basis on emerging International Standards being developed by ISO TC/211 should reference the relevant standard and sections thereof.

¹ The pilot architecture consists of the Engineering, Information, Computational and Engineering architectures as described in Annex B.

- Proposing organizations should plan on performing all development work at their own facilities. These facilities should include a server (where applicable), which is accessible to other pilot participants via the Internet. Technology Integration Experiments (TIEs) will be carried out among the participants based on these Internet-accessible servers.
- Proposing organizations should describe their plan to give the sponsors the choice to either transfer their components to the sponsors environments, or to continue hosting their components from their own networks, making them accessible via the Internet.
- Proposals covering technologies that require licensing should indicate how these technologies can be made available (for one year) to OGC and the sponsors.
- Proposals need not address the full spectrum of the architecture outlined in Annex B. Proposals can focus on specific components of that architecture.
- Proposing organizations should be prepared to build interoperable components and thus should be prepared to cooperate with all selected development teams, regardless of whether individual proposals covered the full architecture or portions of it.
- Proposal selection and funding may be on the basis of portions of the proposal deemed most likely to lead to a successful implementation.
- Proposing organizations should feel free to provide alternatives to the architecture. However, it should be noted that proposals will be selected on the basis of how successfully the various components of all the selected responses interoperate. Radically different architectures that would require intensive rework on the part of a majority of the participants would have to be supported by very persuasive arguments!
- Proposing organizations shall use the supplied template and forms to complete to their proposals.

During the RFQ response period the OGC Interoperability Program (IP) staff (known as the IP Team) will begin working with the Sponsor organization to plan an initial architecture.

Those organizations or companies choosing to respond are expected to have representatives available to attend teleconferences during the following time period:

1. 12/16 – 12/19/2003 - Proposal Reviews and Decision TEM
2. 12/19/2003 - Negotiations

Please note that such teleconferences will be used to clarify questions about submitted proposals. Furthermore, respondents should plan to send at least one engineer to the Kickoff meeting teleconference December 22, 2003.

2.1.1 Management and Communications Plans

The OGC IP Team will supply management and communication plans during the period between the release of the RFQ and the submission of the responses. These plans will provide guidance to the OGC IP Team and participants for the conduct of EMS-1.

The Management Plan details the roles and responsibilities of individuals providing management support to EMS-1. The management plan for OGC IP is outlined in the Interoperability Program Standards Operating Policy, Processes and Procedures (IPSOP³). The following roles have been detailed in the IPSOP³ and are applicable to the EMS-1 Management Team:

1. Sponsor Team—representatives from the organization that has provided sponsorship for the Interoperability Initiative.
2. OGC EMS-1 Initiative Manager—the individual responsible for the overall management of the EMS-1 project.

3. Architecture Team—the individuals responsible for the overall architecture during the course of EMS-1.
4. Technical Integration Team—a team of individuals representing the all participant and sponsoring organizations that are engaged in demonstration, testing, or data provision. The primary task of this team is to build out the components of the designated architecture, modify the specifications in the designated architecture as necessary, design tests that exercise the components ability to interoperate, document progress and communicate results to OGC community.
5. OGC IP Team—a group composed of the OGC EMS-1 Initiative Manager, Architecture, and the interdisciplinary team responsible for overall management of the OGC Interoperability Program.

OGC will engage in a contractual agreement with each participant. The contract will contain common vision and goal statements and will be an agreement to work toward common goals and will define the roles and responsibilities of the participants.

Included in this RFQ is a Communications Plan for reporting and exchanging information with participants, relevant SIGs and WGs, TC, PC, and sponsors. This plan will outline the incorporation of the OGC Web Portal with appropriate documents and regular updates to EMS-1 information. A monthly progress report will provide OGC and the Sponsors with status of deployment activities as well as interim interface and protocol decisions and interface designs. The progress reports will be posted to the web site. OGC IP Team will provide a list server for participants to exchange project relevant e-mail. A teleconferencing plan will be developed to further support inter-participant communications.

2.2 Initiative Design, Response Analysis, Selection and Negotiations

Figure 1 depicts the processes involved in the Initiative Design phase. Each of these processes, their inputs and outputs, and others aspects are detailed in this section.

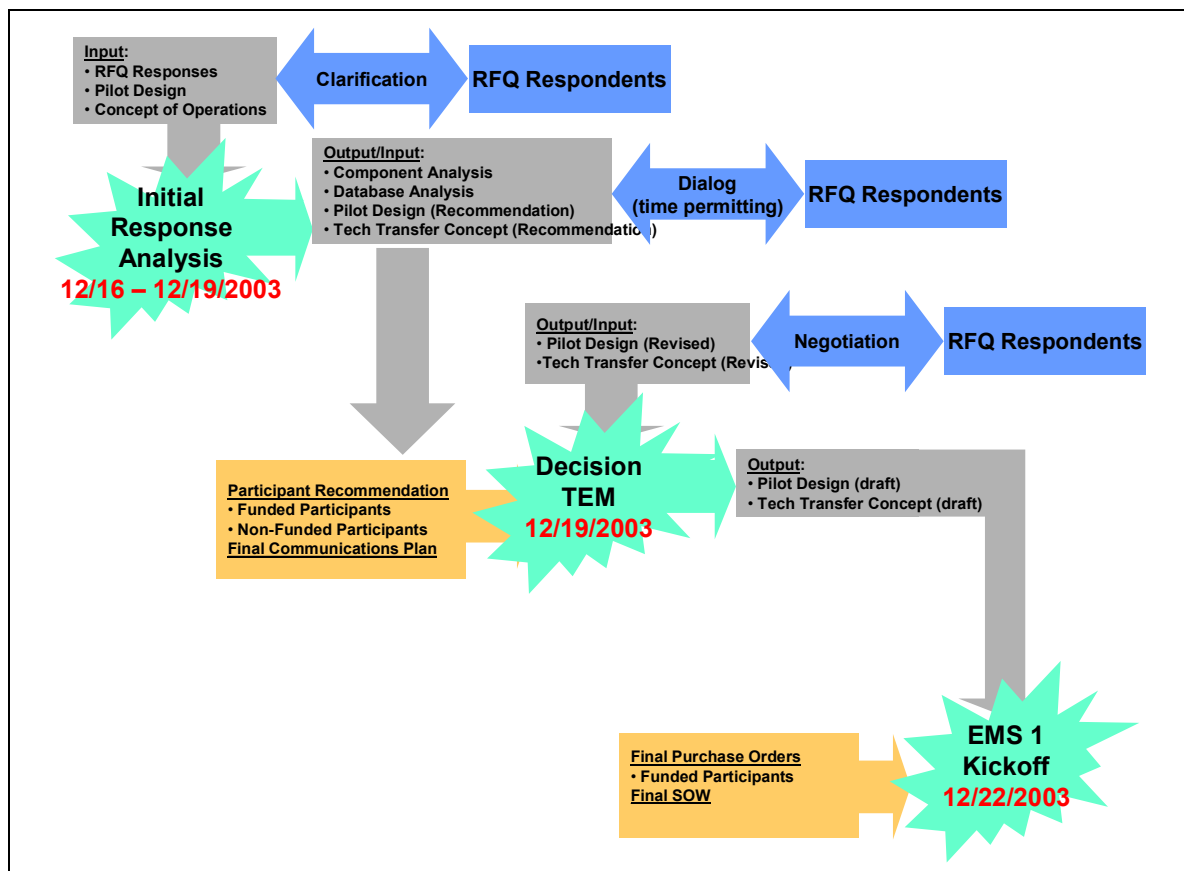


Figure 1: Processes leading up to EMS-1 Kickoff Meeting

The OGC IP Team and Sponsors will review the RFQ responses beginning immediately after the deadline for submission Noon December 16, 2003. During the review process (December 16-19, 2003) the OGC IP Team may need to contact respondents for clarification, thus respondents should prepare for this eventuality. Time permitting, OGC may also dialog with RFQ respondents about details of the recommended Initiative Design and Demonstration Concept.

2.2.1 Component and Requirement Analysis

The review team will accomplish three tasks:

1. Analyze the components proposed in the RFQ responses in the context of EMS-1 WBS found in Annex A.
2. Compare the proposed efforts with the requirements of the initiative and determine viability.
3. Assess the feasibility of the RFQ responses against the requirements.

2.2.2 Initiative Architecture Recommendation

The proposal review team will then draft the recommended Engineering Architecture to include the set of proposed components for deployment and/or development within the initiative. These components will then be related to the hardware and software available. Any candidate interface and protocol specifications received during the RFQ process will be included with the draft initiative architecture as annexes.

2.2.3 Demonstration/Technology Transfer Concept Recommendation

The preliminary analyses of responses will be used to develop a technology transfer concept. EMS-1 will culminate in a session to train the sponsors on the components, tentatively scheduled for March 29-31, 2003.

2.2.4 Decision TEM

At the Decision Technical Evaluation Meeting, OGC IP Team will present to the sponsor:

- Initiative Architecture Recommendation
- Technology Transfer Concept Recommendation

This presentation will be made in the context of first drafts of the plans described above:

- Management Plan
- Communications Plan
- Sponsor requirements

The primary decisions to be made by the sponsors at this TEM are:

- Is the recommended Initiative Architecture workable? If not, an alternative architecture will be proposed and developed.
- Which RFQ responses, or subset thereof, should be provided cost-sharing funds and at what level given all inputs?
- Is the Technology Transfer Concept workable? If not, an alternative demonstration concept will be proposed and developed.
- Are the Management and Communications Plans reasonable and complete?

Immediately following Decision TEM, EMS-1 staff will begin to evaluate sponsor recommendations to the various plans and will revise the plans and concepts accordingly. It will also make budgetary adjustments based on sponsor inputs.

2.2.5 Presentation of Design at OGC TC

At the meetings of the OGC Technical and Planning Committees following the Decision TEMs, the IP Team will present the EMS-1 design to the participants, the TC, and the PC. This presentation will include:

1. The "final" Pilot Architecture
2. The "final" Concept of Operations
3. The initially selected participants

2.3 Initiative Kickoff

December 22, 2003, EMS-1 will be launched officially with a Kickoff meeting held by teleconference. Prior to the Kickoff meeting all the participants will sign a Contract that includes a description pertaining to the aspect of EMS-1 in which they will participate.

The Kickoff meeting will address development activities in the EMS-1. During the Kickoff, initiative development will be jump-started using the preliminary architecture concepts established by the IP Team and the Sponsor, and other assets that participants bring to EMS-1. Participants will be asked to volunteer to address any perceived shortfalls. However, the process that will be used during the Kickoff will allow each of the activities to interact with the other.

An additional product of the Kickoff meeting will be a development schedule that defines specific milestones in the Pilot Development/Technology Transfer phases. These milestones will cover component-to-component interactions via the interfaces under development as well as component insertions into demonstration scenarios. Among these milestones will be Technology Integration Experiments. These TIEs will be conducted on a planned basis during the Specification and Component Development activities. Participants providing software components based upon draft specifications developed during the course of EMS-1 shall participate in relevant TIEs.

2.4 EMS-1 Development & Technology Transfer

EMS-1 consists of activities to develop elements of Open GIS Consortium standards. During the Development phase, the EMS-1 Architecture may be refined while groups of participants work on specific component development.

2.4.1 Schema, Component Development and Test & Integration

This section defines the phase called Component Development and Test & Integration Phase. The schedule and further information will be developed and provided at the Pilot Kickoff.

During this phase, the EMS-1 Architecture will be refined while groups of participants work on specific component development. Technology Integration Experiments (TIEs) will be conducted on a regular basis in an iterative manner as outlined by the initiative architects in the development schedule. During identified TIE phases of the initiative, participants developing components within the EMS-1 Architecture shall test interfaces for component accessibility, behavior, and most importantly, interoperability. IP Team will develop a TIE matrix defining the nature of TIEs that shall be conducted and their scheduled occurrence within the initiative. Participants will report the outcome of each TIE following the TIE reporting template provided by IP Team.

TIEs will be conducted within the development cycle of the Initiative. TIEs will follow interface design, interface construction, component creation, and integration of the interface with application logic. A test harness will then be built, and then the component will be tested. During each TIE iteration, the component being exercised shall have data loaded to allow third party access to exercise the current functionality.

Participants working behind firewalls shall take any necessary steps to allow the test to be conducted through the firewall or outside of the firewall. All participants are expected to provide appropriate documentation to allow the successful conduct of these experiments. All participants are expected to upload a reference to their components to the Initiative web site for each TIE iteration. In order for the TIEs to be meaningful, participants must provide clients in addition to servers. Participants shall report the outcome of TIEs to EMS-1 list and the Initiative Architecture Team.

Annex B, EMS-1 Architecture, describes an initial set of information, services and interface mechanisms. It is intended that there be a periods of development followed by periods of synchronization between the various component developers. This will allow for issues to be resolved and documented before divergence begins to occur between individual component developers (i.e., two server developers) and between dependent component developers (i.e., server and client developers).

2.4.2 Technology Transfer

During the initiative development phase, participants build and implement prototypes, which clearly demonstrate the capabilities of the components to exercise the sponsors' requirements. As a core requirement of the pilot effort, the sponsors have requested that all components be made available via the Internet or for use in the sponsors' internal labs.

Providers of client and server software will be required to deliver software to sponsor locations (up to 3) at the end of the initiative in a technology transfer session. Providers of software components should offer a one-year license for their software. Organizations proposing software components should include hardware and system requirements. Thin or platform independent clients are preferred, as sponsor platforms may vary. Each participant developing a software component should plan to provide a demonstration and technology transfer session with each of the 3 sponsors. The OGC IP team will coordinate with participants and sponsors regarding the optimal setting for a technology transfer scenario. The participants should deliver all software documentation and training materials to the Sponsors at the time of the technology transfer.

The component elements of the demonstration/technology transfer include but are not limited to the following:

1. All Executables
2. All Necessary Links and Datasets
3. Supporting Documentation, Installation Instructions, Scripts, etc.

Providers of server side components are asked to propose two options:

1. The transfer of components to a sponsor location. This option should include hardware requirements, licensing, maintenance and support for one-year from the solution transfer.
2. The maintenance of the server components at a participant provided facility for a period of one-year from the end of the solution transfer session. The proposing organization should include the operation hours and support hours that will be available.

3 Progress Reporting

The OGC IP Team will provide regular (monthly) progress reports pertaining to progress of EMS-1 to the sponsors. The OGC IP Team and the sponsors intend to provide regular status reports about the program to the OGC Technical Committee, and the OGC Planning Committee. Currently EMS-1 planning activities and development phase will coincide with one OGC Technical Committee and Planning Committee meeting. At that time the participants will present interface designs to the TC and PC. Demonstration scenarios and the architecture to support those demonstrations will be included in the presentation.