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Request For Quotation

And

Call For Participation

in the

OGC Emergency Mapping Symbolology (EMS-1) Initiative

RFQ Issuance Date: 19 November 2003

Proposal Due Date: 16 December 2003

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1 Introduction

1.1 Purpose

The purpose of this Request For Quotation (hereafter referred to as RFQ) is to solicit your proposal in response to a defined set of requirements for the Open GIS Consortium (OGC) Emergency Mapping Symbology (EMS) Initiative. OGC, along with U.S. and Canadian Agencies, are providing cost-sharing funds to partially offset expenses uniquely associated with the initiative. OGC intends to award a small number of participants cost share funding for this initiative. Awards will be based on the quality of the response to this RFQ. Proposals will be evaluated with regard to technical merit in adhering to the requirements and Work Breakdown Structure (WBS) tasks, adherence to instructions for response in the main body and the Annexes, and the value of the proposal in terms of cost and return on investment. The total estimated amount of cost share funding currently available is approximately US \$200,000.¹

This RFQ consists of five major sections: the Main Body; Annex A which describes the requirements, tasks and Work Breakdown Structure (WBS); Annex B which describes the initiative architecture; Annex C which describes the Concept of Operations for this initiative, and Annex D which describes the Communication Plan. Annexes A and B are directly pertinent to responding to this RFQ. Annexes C and D provide context for how the initiative will be conducted and your proposal should reflect familiarity with the content therein. The Main Body provides a description of this initiative and instructions for developing your proposal.

1.2 Background

The EMS Initiative will mature OGC's specification framework for interoperable geographic symbolization while simultaneously testing emerging standard map symbol sets for emergency response developed by national-level agencies. The requirements and concepts address interoperability needs for the use of symbology in emergency mapping.

The development of standards for emergency mapping will strengthen coordination, communication and interoperability of emergency management communities. The results will enhance the ability of planners and emergency managers to better understand and share mapped information at a glance during crucial decision-making moments. From an operational perspective, standardized emergency mapping symbol sets implemented over standard-based web mapping architectures will support the quick and easy development of multi-source common operating pictures, giving users a vital shared view of the emergency at hand. Systems generating common operating pictures using standards-based software will access spatial and related content from many sources and symbolize them in a common consistent manner, independent of the underlying feature classification schemes, data structures or data models. While the enabling technologies for EMS are based on widely used Web standards, access may be easily restricted to EMS components deployed on Intranet, VPN and LAN networks.

The EMS Initiative will facilitate OGC and industry vendors to develop, test and validate interface specifications, which are anticipated to lead to commercial products suitable for use by national, state, provincial, local and private emergency management agencies as well as the broader federal geospatial community.

The EMS Initiative will address sponsor requirements including the:

- Development of a client application for publishing, discovering, managing, and previewing particular symbolizations associated with geographic features,
- Testing the assignment of symbols to particular feature types managed in feature level data stores,

¹ OGC has an open Call for Sponsors. Cost share totals could increase with additional sponsorship.

- Testing and enhancement of the Style Layer Descriptor (SLD) Implementation Specification and its use in Web Mapping Service implementations to support the portrayal of specified symbol sets, and
- Testing and enhancement of the Style Management Services Specification (SMS).

The EMS Initiative will result in an implementation of the Style Management Service (SMS) that was first developed and demonstrated in the Open Web Services Phase 1.2 (OWS-1.2) test bed initiative. While SMS can be thought of as a type of Web service, it is more precisely a logical composition of design-patterns, service interfaces and encodings. As such, SMS defines an *architecture* for enabling scalable and interoperable management of symbols and styles for Web mapping.

The EMS Initiative will address sponsor requirements including the development of a client for publishing, managing, and previewing particular symbolization configurations, testing the assignment of symbols to particular feature types from a feature level data store, testing and enhancement of the Style Layer Descriptor (SLD) Implementation Specification and its use in Web Mapping Service implementations to support the portrayal specified symbol sets, and the testing and enhancement of the Style Management Services Specification (SMS). The EMS Initiative will be an implementation of the Style Management Service (SMS) that was first described and demonstrated in the Open Web Services Phase 1.2 (OWS-1.2) test bed initiative. While SMS can be thought of as a type of service, it is in actuality a logical composition of design-patterns, service interfaces and encodings. As such, SMS defines an *architecture* for enabling scalable and interoperable management of symbols and styles in support of cartographic portrayal processes.

The EMS Initiative will utilize the ongoing work of the Federal Geographic Data Committee (FGDC) Homeland Security Working Group (HSWG). The FGDC has been tasked to develop a standard set of symbols for use by the Emergency Management and First Responder communities at all levels of need (i.e. National, State, Local and Incident)². This in-progress symbology set currently consists of point symbols for incidents, natural events, operations, and infrastructures. Furthermore there are color and pattern options to visualize damage/operational status of these categories. In addition to utilizing the FGDC point symbol set, the EMS Initiative will utilize GeoSym (MIL-PRF-89045) for symbolizing Vector Product Format (VPF) data.³

1.3 The RFQ Process

This RFQ is being released to the OGC community. It requests support for broad OGC interoperability objectives on a voluntary basis. Specifically, organizations are invited to contribute to the design of the capability identified in the effort and explore architectural alternatives, performance characteristics, and ease of application development as direct input into the technology development activity of OGC.

All organizations interested in participating in the Test Bed effort shall respond with a proposal. Instructions for submitting proposals are provided in Section 4. Section 5 provides detailed instructions for the format and content of proposals. The limited cost-sharing funding available is intended to help partially offset engineering costs incurred by participants in support of this effort. No OGC cost-sharing funds will be used by the participants to procure any proprietary hardware or software associated with this effort.

Each organization with a role in the initiative will sign a contract and statement of work or a statement of participation with OGC that outlines roles and responsibilities of each participant. By doing so, participants will agree to work together for the realization of the initiative goals and for the benefit of the industry.

² See <http://www.fgdc.gov/HSWG>

³ http://www.nima.mil/cda/article/0,2311,3104_12137_118865,00.html

1.4 Benefits to Participants

OGC perceives EMS as an opportunity for vendors, users, and other interested parties to mutually define services, interfaces and protocols in the context of a hands-on engineering experience, resulting in Interoperability Program Reports (IPR). This initiative is expected to help shape the future of interoperable technology to meet Emergency Management and Response requirements. The sponsors are backing their belief in this vision with cost-sharing funds to partially offset development costs associated with this capability. This cost-sharing approach offers OGC members a unique opportunity to recoup a portion of their expenses related to the project. Another benefit is that this effort has well-defined objectives, while providing a significant opportunity to explore alternatives in a unique hands-on engineering context. When this activity is successful, sponsorship for follow-on activities could continue.

2 Test Bed Description

Successful demonstration of SMS capabilities requires the ability to portray symbolized geospatial datasets using the FGDC HSWG and GeoSym symbol sets. For SMS to be completely realized, a consumer of SMS capabilities, such as an enhanced implementation of a WMS service or a client application, is required. Such an enhanced portrayal capability must demonstrate the use of the critical elements of the SMS Architecture developed in this Initiative: WOS, enhanced SLD, CS-Wand RIM, GML, and required metadata. In addition to the requirement for a complete SMS implementation for portrayal (including enhanced WMS), one or more portrayal clients must be used to demonstrate the capabilities for publishing, discovery, management and portrayal of styles and symbols that SMS enables.

3 Your Role in the Test Bed

There are several possible roles that organizations may play in the initiative. Each proposal may bid on one or more of these roles:

- SMS implementer (one proposal will be selected for this role)
- WMS/SLD implementer (one proposal will be selected for this role)
- Client implementer (one proposal will be selected for this role)
- WFS implementer (one proposal will be selected for this role)
- Solution transfer (each proposal should include this role)

Participants should propose specifically against the Requirements and Work Breakdown Structure listed in Annex A. As defined in Section 5, participants should be prepared to include the following information in their response: Define system configurations; Price bundled software and/or individual applications; and Provide training.

4 RFQ Submission Information

4.1 OpenGIS Consortium

This RFQ assumes the recipient is not only familiar with the OGC mission, organization, and process, but is an OGC member. *Non-member proposals will be considered only if a completed application for OGC membership precedes the proposal.*

4.2 General Terms and Conditions

Documentation submitted in response to this RFQ will be distributed to members of OGC staff, the Interoperability Program Team, and sponsor staffs. 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 pilot effort. Proprietary and confidential information must not be submitted under this request.

Participants will be selected to receive cost sharing funds on the basis of adherence to the requirements stipulated in this RFQ and the overall quality of their proposal. The primary objective of EMS Sponsors is to use cost sharing funds to promote the development of Standards-based Commercial Off-The-Shelf (SCOTS) software. We encourage respondents to exploit the results of innovative R&D efforts, but the objective is SCOTS. Respondents are asked to define the migration path for producing SCOTS solutions. Please describe your organization's commitment to SCOTS in the overview section and your organization's SCOTS migration plan (whether implemented already or to be implemented in the future) in the Component Development section of your proposal. Those proposing organizations not selected for cost sharing funds are encouraged to participate in EMS on an in-kind basis.

Each participant will be required to enter into a contract with OGC. This agreement will define participant responsibilities. By signing the contract, each participant will agree to work together towards the common goals of the initiative. Further details on this issue are found in the Concept of Operations (Annex C).

4.3 Submission Instructions

Submissions to this request shall be "complete"; i.e., your submission must provide all information requested in Section 5 to be considered.

4.4 How to Submit

Submit an electronic copy of your proposal to the OpenGIS Technology Desk (techdesk@opengis.org) at OGC. Microsoft Word® 6.0 or higher format is preferred; however, Portable Document Format or Rich Text Format is acceptable.

Send responses to this RFQ (and other communication regarding this RFQ) to:

Regular mail:	OpenGIS Technology Desk
Or Express packages ⁴ :	Open GIS Consortium, Inc.
	4899 North Old SR 37
	Bloomington, IN 47408-9239
	USA

Proposals must be received at OGC no later than 1200 EDT December 16, 2003.

Canadian OGC members that are interested in this initiative must contact Jennifer Sokol at GeoConnections (Jennifer.Sokol@nrcan.gc.ca or 613-947-1285) to receive further instructions for this initiative and submission process.

4.5 Questions and Clarifications

Questions and requests for clarification should be sent electronically to the OpenGIS Technology Desk (techdesk@opengis.org), by mail to the address in section 4.4, or by facsimile transmission (+1 812 334 0625). All clarifications will be posted to the OGC WWW Site (<http://www.opengis.org/initiatives/?iid=87>) and to the OGC Technical Committee electronic mail reflector.

4.6 Reimbursements

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

4.7 Schedule

The following table details the events and activities associated with this RFQ (more details can be found in Annex C):

RFQ Issued	19 November 2003
RFQ Responses Due	16 December 2003
Kick off	22 December 2003
Technology Transfer	29-31 March 2004
DIPRs Due	31 March 2004

5 RFQ Format and Content

5.1 Proposal Length (page limit)

Organizations submitting a proposal to participate in the EMS-1 initiative should keep proposals to a maximum of 10 pages.

5.2 Proposal Outline

As part of this RFQ archive you will find several templates: the response template, the cost sharing request spreadsheet template, and the in-kind contribution spreadsheet template. Proposing organizations shall use these templates in preparing their proposals. The proposal should follow the outline:

- Cover page
- Overview
- Proposed contribution
- Past Performance
- Proposed contribution cross referenced to WBS (refer to Section 5, WBS, in Annex A)
- Level of Effort
- 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)

Each of these Sections is described below.

5.3 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/contracts contact and a technical point of contact.

5.4 Overview

Provide an introduction to the contents of your proposal and its benefits. The response to section 5.4 should not exceed 12 pages. Section 5.5, Past Performance, is limited to one page. There are no specific page limitations on the remaining sections. (TBD RF I think we should impose a page limit.)

5.5 Proposed Contribution

Describe your proposed contribution to the initiative based on your desired role, as defined in Section 3, and consistent with the Architecture (Annex B). Your proposal may address all or part of the effort described in this RFQ package. The cost elements for your proposed contribution should reflect the technical approach and specific requirements that you have chosen to address in your response. The initiative emphasis is on interoperable solutions to the sponsors' functional requirements and your RFQ response should be developed from that perspective. Justify your approach.

5.5.1 Integration Support

If you are proposing to support integration activities, please indicate your experience with installed Federal, state, local and commercial geospatial systems and describe the experience of your proposed personnel per paragraph 5.4.6.

5.5.2 Integration Experiment Development

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

Do not assume a single vendor architecture; rather the final system architecture will demonstrate how your technology can interoperate with other participant's technology.

5.5.3 Component Specification Enhancement

If you are proposing to contribute enhanced WOS, SLD, WRS, SMS components and/or client development for publishing, managing, and previewing particular symbolization configurations, please include in your proposal as much detail as possible concerning the technical approach, operating system, hardware, programming language, and proprietary software requirements or constraints that relate to your proposed components. We strongly encourage organizations that are proposing a server component to provide 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.

5.5.4 Data

If you are proposing to contribute data 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, geodetic context 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.

5.5.5 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 proposed personnel will be able to participate in kickoff activities and other pilot site activities.

5.5.6 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 available at the facility. Please provide information about your organizational approach to configuration management.

5.5.7 Hardware

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

5.5.8 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 Pilot.

5.6 Past Performance

Participants should address their experience with OGC standards by detailing previous efforts on developing or implementing standards. This section is limited to one page.

5.7 Proposed 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 are being met with your contributions in the descriptions of activities that your organization proposes to undertake.

5.8 Level of Effort Estimate

Please provide an estimate of the value of your proposed contribution, including engineering, management, communications, travel, and so forth. Please begin this Section on a new page so that it can be separated from the main body of your proposal.

Level of effort and cost information must correspond with the extent of the solution being proposed. If the participant plans to propose against all of the requirements, they must provide pricing for the whole solution, as well as a price breakdown for each major element of the proposed solution. Participants only proposing against a subset of the requirements must provide pricing and level of effort information that corresponds to the subset proposed.

5.8.1 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-Pilot 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.

5.8.2 In-Kind Contributions

Please provide an indication of the in-kind contributions that your organization will make to the EMS initiative. This should reflect such contributions as labor, equipment, software, or data, as described in your proposal. 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 Evaluation Criteria

EMS-1 responses will be evaluated according to criteria set by the Sponsors. Those criteria can be divided into three areas: Technical, Management, and Cost. In addition, proposals exceeding the maximum page limit (10 pages) will be evaluated as non-compliant.

6.1 Technical

The Technical criteria are described below:

- Requirements are addressed
- Response shows reasonable technical approach that supports accomplishing requirements
- Creativity and originality
- Appears implementable
- Is relevant to initiative goals

6.2 Management

Management criteria are described below:

- Adheres and addresses Work Breakdown Structure
- Willingness to work in collaborative environment
- Achieves Sponsor goal of enhancing availability of SCOTS or standards-based open source products in the market place

6.3 Cost

Cost criteria are described below:

- Cost-share request is reasonable for proposed effort
- In-kind contribution is of value to initiative