The Open Geospatial Consortium (OGC®)

**Request for Quotation
And
Call for Participation
In the
INCIDENT MANAGEMENT INFORMATION SHARING (IMIS)
INTERNET OF THINGS (IOT) PILOT
Annex A — Development Approach**

RFQ Issuance Date: 22 April 2015
Proposal Due Date: 22 May 2015

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1   Introduction

This Annex A document is an integral part of this RFQ/CFP. It contains and describes the following:

1) Interoperability Initiative Process Framework
2) Work Breakdown Structure (WBS)
3) Concept of Operations
4) Communications Plan
5) Interoperability Program Code of Conduct

2   Interoperability Initiative Process Framework

This section describes a flexible framework of standard, repeatable processes, which can be combined and adapted as necessary to address the requirements of each Interoperability Initiative. These tasks are executed with a Virtual Team Infrastructure. This Process Framework forms the basis for the OGC Initiative Work Breakdown Structure.
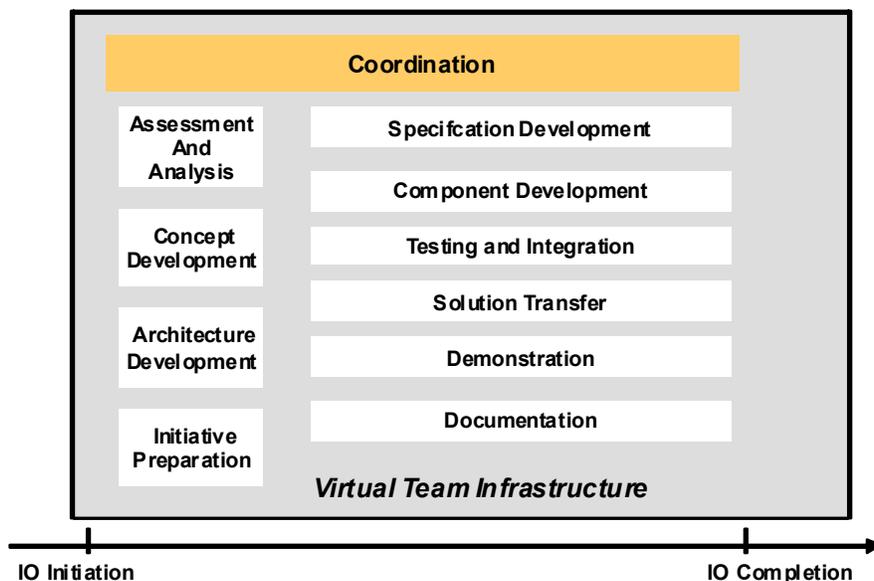
Figure 1, Interoperability Initiative Process Framework

2.1   Tasks

2.1.1   Coordination

This task enables overall coordination between OGC Staff, OGC IP Team, Sponsors, selected organizations, and other TC/PC Members as needed to perform the following Subtasks:

- **Collaborative Environment -** OGC IP Team provides synchronous and asynchronous collaboration environments for cross organizational, globally distributed, virtual teams working interdependently to execute Initiative Orders Activities under this subtask

include reading email and engaging in collaborative discussions including teleconferences.

- **Management** - Services ensuring Initiative Order participants are staying within designated budgets, that the work is progressing according to the agreed schedule, and that the tasks identified in the Statement of Work are executed. Including status reporting.
- **Communication** – Includes communicating ongoing and planned Initiative and Work Item Status to OGC, Sponsors, and other organizations such as ISO. This task does not include IP Business Development functions.

2.1.2   Assessment and Analysis

This task requires assessment/evaluation and analysis of issues and documentation of an organization's or domains existing capabilities, and assessment of requirements for OGC compliant technology. This task is implemented during planning stages for the initiative.

2.1.3   Concept Development

This task conducts a Feasibility Study that assesses emerging technologies and architectures capable of supporting eventual Interoperability Initiatives (e.g. Pilot, Testbed). Part of the concept development process is the use of a Request for Technology (RFT) to gain a better understanding of the current state of a potential technology thrust and the architecture(s) used in support of that technology. The feasibility study examines alternative prototype mechanisms that enable commercial web-services technology to interoperate. The study may also assess the costs and benefits of the architectural approaches, technologies, and candidate components to be utilized in a pilot or testbed and potential demonstration. This task also collates Sponsor requirements and assesses the applicability of current specifications.

2.1.4   Architecture Development

This task defines the architectural views for any given Initiative. In the context of the OGC Interoperability Program, there are three – and perhaps more - architectural views for any given effort. These views are the Enterprise View, Information View and Computational View (based on RM-ODP, ISO 10746). Part of the Architecture Development task may be the use of an RFQ issued to industry to enable organizations interested in participating in an Interoperability Initiative to respond with a proposal. This task may also be implemented during the planning stages of an initiative.

2.1.5   Initiative Preparation and Startup

This task defines the participant budget (if any), develops and executes agreements and contracts that define roles and responsibilities of each participant. This task may refine the Work Package.

2.1.6   Specification Development

This task defines and develops models, schemas, encodings, and interfaces necessary to realize required Architectures and includes specification Pre-design and Design tasks. This task may include activities to coordinate ongoing Initiatives with Specification Program activities.

2.1.7   Component Development

This task develops prototype interoperable commercial software components based on draft candidate implementation specifications or adopted specifications necessary to realize the required Architecture.

2.1.8   Testing and Integration

This task integrates, documents and tests functioning interoperable components and infrastructures that execute operational elements, assigned tasks, and information flows required to fulfill a set of user requirements. Includes Technology Integration Experiments (TIEs).

2.1.9   Solution Transfer

This task prepares prototypical interoperable components so that they can be assembled at required sites.

2.1.10 Demonstration

This task defines, develops and deploys functioning interoperable components and infrastructures that execute operational elements, assigned tasks, and information flows required to fulfill a set of user requirements.

2.1.11 Documentation

This Task ensures development and maintenance of the pre-specification; pre-conformant interoperable technologies and OGC work products, including draft and final Interoperability Engineering Reports (ERs) and systems level documentation, such as example user documentation, necessary to conduct the Initiative. This task may include coordination with OGC Specification Program activities including the Documentation Team.

3   Work Breakdown Structure (WBS)

The Work Breakdown Structure (WBS) provided in the Appendix of this Annex is derived from the OGC Interoperability Initiative Process Framework.

A proposing organization does not have to respond to all tasks in the WBS. However ***bold italic text in the task explanation indicates which tasks are mandatory or conditional***. Conditional tasks are those that are mandatory if a proposing organization takes on certain non-mandatory tasks. All responses shall use this WBS to structure their responses. Evaluations of responses will be based on whether a proposal addresses the WBS task items. So an organization anticipating working on a particular task that fails to indicate their intent by using the WBS structure below will not be considered for the desired task. The project plan and schedule will use this WBS as a template as well.

4   Concept of Operations

This section describes the Concept of Operations for the IMIS IoT Initiative. It is organized around eight particular time frames or phases. The phases are:

- Proposal Development — the time during which 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.

- Proposal Evaluation, Selection and Negotiations — During this period, the OGC IP Team will analyze responses for funded and unfunded work items in the WBS described in Section 3 of this Annex A. OGC will communicate with RFQ respondents concerning their proposals, negotiate on their participation for funded and In-Kind (unfunded) Contributions, and communicate the status of the IMIS IoT Initiative with Sponsors and the OGC Technical and Planning Committees. During this time, Participant Agreements with Statements of Work (SOW) will be signed.

- Task Initiation Workshop — the Task Initiation Workshop will be a face-to-face meeting and last approximately two days. During the Workshop, participants will (a) develop generic interfaces and protocols to be used as the starting place for software components, (b) finalize the initial System Architecture and; (c) refine the Demonstration Concept. Attendance at the Workshop is required by participants and includes Sponsor representation.

- Preliminary Design and Deliverables – This is a milestone established for participants to complete initial draft documents, such as design documents or preliminary service implementations needed for initiative coordination and integration, as determined by IP Team and Participants during the Task Initiation Workshop. This Milestone activity may be conducted using GoToMeeting and Telecon.

- Design, Development, Testing, and Evaluation Sprints - During each of these periods, selected organizations will draft or update software, hardware, and data designs as needed; develop or identify supporting software, hardware, and instance data; conduct analysis and testing of target information exchanges and system capabilities; then evaluate the designs in light of running code experience.

- Final Demonstration Milestone – A Milestone is established for submitting drafts of engineering reports and demonstration material. These preparations are typically organized and coordinated among Participants according to roles and system architectural dependencies to achieve integration of components, support demonstration and final delivery.

- Final Delivery – This milestone is the close of funded activity, when all final reports and demonstration materials are due. Further development may take place to refine demonstrations for placement for public viewing on the OGC website, or for subsequent OGC meetings.

4.1   Project Lifecycle Phases

4.1.1   Proposal Development

4.1.1.1   Proposing Organization Activities

The following guidelines are provided to proposing organizations concerning proposal development:

- Proposing organizations must be members of OGC, or must submit an application for membership if their proposals are accepted.

- The OGC Standards will cover some of the technology areas under consideration in the RFQ. The relationship between the content of the proposal and the relevant OGC standards should be noted by the Proposing organizations.

- Proposing organizations should plan on performing all development work at their own facilities. These facilities should include a server (where applicable) that is accessible to other participants via the Internet. Technology Integration Experiments (TIEs) will be carried out among the participants based on these Internet-accessible servers.

- The immediate outcomes of the initiative will include Engineering Report(s), which may become new OGC specifications or Best Practices; or implementations that become part of the OGC Network. Proposals covering technologies that require licensing should indicate how these technologies can be made available as a (permanent) part of OGC Network. Proposals should include a description of technologies requiring specific hardware or software environments.

- Proposals need not address the full spectrum of this initiative's architecture as outlined in Annex B. Proposals can focus on specific tasks or portions of that architecture.

- Proposing organizations should be prepared to build interoperable components and thus should be prepared to cooperate with other participant development teams, regardless of whether their proposals covered the full initiative architecture or portions of it.

- Software components implemented in this initiative should either be based upon currently shipping products, or should be prototypes or pre-release versions of products that the responding organization intends to sell or otherwise distribute for ultimate deployment.

- Responding organizations must participate in the full course of interface and component development, test and integration experiments, and other essential activities throughout the initiative in order to have access to and participate in demonstration exercises.

- Proposal selection and funding may be awarded on the basis of portions of the proposal deemed most likely to lead to a successful project implementation.

- Proposing organizations may propose to provide alternatives to the project architecture. However, it should be noted that proposals would 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 cost/benefit analysis. Advance coordination with affected participants to present a coherent, realistic, and reasonable approach will greatly improve chances of acceptance by the proposal review team.

- Proposing organizations should be familiar with the existing OGC Network. OGC Network provides a set of services, datasets, components, toolkits, and reference materials that can and should be used to leverage results for this initiative.

- Proposing organizations shall use the supplied template and forms to prepare their proposals.

Organizations choosing to respond to this RFQ/CFP are expected to have representatives available to attend or participate in the following teleconferences or activities:

1. Questions Due and Bidders' Q&A teleconference
2. Negotiations with selected organizations.

Organizations selected and awarded cost share funding to participate in the initiative; and participants offering In-Kind Contributions shall plan to send at least one technical representative to the Kickoff Workshop.

Specific dates for the events identified above are provided in the project's Master Schedule (RFQ/CFP Main Body, Section 4.)

4.1.1.2 Management Approach and Communications Plan

The IMIS IoT IP Team will apply the standard OGC Initiative management approach, and initiate its communication plan during the period between the release of the RFQ and the submission of the responses. These activities will provide guidance to the IMIS IoT Team and participants for the conduct of the IMIS IoT Pilot.

The management approach for project, as for other OGC IP initiatives, is outlined in the Interoperability Program Policy and Procedures documents available on the OGC Website[1].

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[1] http://www.opengeospatial.org/ogc/policies/ippp

These documents provide details on the following roles and responsibilities of individuals providing management support to OGC initiatives:

1. Sponsor Team—representatives from the organizations that have provided sponsorship for the IMIS IoT initiative. Note that some sponsor organizations may also provide components in the initiative, effectively also acting as participants.
2. OGC Initiative Manager—the OGC staff person responsible for the overall management of the IMIS IoT initiative.
3. Initiative Architect—the individual(s) responsible for the overall initiative architecture during the course of the initiative.
4. Participants — Organizations that provide the development and demonstration effort of the initiative. Participants develop component interface and protocol definitions, implement components, revise interface and protocol definitions, and evolve the initiative architecture. Participants prepare scenarios for demonstrations, design tests that exercise the components, perform data development in support of these scenarios, build demonstrations and tests, and evolve the demonstration concept.
5. Demonstration Manager —the individual responsible for planning and managing the Demonstration activity of the IMIS IoT initiative – this role may be performed as part of other roles.
6. Communications and Outreach—the individual(s) responsible for the messaging with media, sponsors, and industry related aspects about the initiative.
7. OGC IP Team—a group composed of the OGC Initiative Manager, Initiative Architect, Demonstration Manager, and Communication and Outreach personnel.

The Communications Plan, provided in Section 5, provides details on resources and procedures for reporting and exchanging information with participants, relevant working groups (WGs), Technical Committee (TC), Planning Committee (PC), Strategic Member Advisory Committee (SMAC) and sponsors. This plan includes the development of an OGC Portal web page with appropriate documents and updates for project information. The OGC IP Team will provide an email list server for participants to exchange project-relevant content and for discussion. A teleconferencing plan and online collaboration plan will be developed to further support communications among participants.

4.1.2   Proposal Evaluation, Selection and Negotiations

The IP Team, Sponsors and partners will review the RFQ responses beginning immediately after the deadline for submission. During the review and evaluation process the OGC IP Team may need to contact proposing organizations for clarification or to understand a Bidder's proposed Initiative Design and Demonstration Concept. The process leading up to the Kickoff Workshop is detailed in the following paragraphs.

4.1.2.1   Component and Requirement Analysis

The review team will accomplish three tasks:

1. Analyze the elements proposed in the RFQ responses in the context of the WBS.
2. Compare the proposed efforts with the requirements of the initiative and determine viability.
3. Assess the feasibility of the RFQ responses against the use cases.
4. Analyze proposed specification development
5. Analyze proposed testing methodologies, including but not limited to performance testing methodologies.

4.1.2.2 Initiative Architecture Recommendation

The proposal review team will then draft a candidate system architecture, which will include the set of proposed components for development within the initiative, and relate them to the hardware, software and data available. Any candidate interface and protocol specifications received during the RFQ process will be included with the draft system architecture as annexes.

4.1.2.3 Demonstration Concept Recommendation

The team will incorporate results from the evaluation of responses into a preliminary demonstration concept. The demonstration concept will discuss the ability of proposed hardware and software components and related data to work together in the demonstration context, and will identify gaps.

For proposals that include tasks to provide clients, data access service or processing components, the IP evaluation team will assess the ability of proposed components to support the anticipated demonstration scenarios and requirements. The IP Team will then estimate the extent to which proposed datasets, other data assets and related metadata would be suitable for use to support the project and demonstration. In cases where components are intended to operate on dynamic data such as sensor observations, data assets will be needed to support both live testing and repeatable demo simulations. Bidders are encouraged to provide as much information as possible to describe the type, extent and suitability of data available to support development, testing and demonstration for the initiative.

In addition to clients, service components and datasets to be provided by participants, the demonstration concept aims to identify existing or emerging resources on OGC Network. This initiative will culminate in a demonstration and supporting materials for sponsors, stakeholders and OGC members.

4.1.2.4 Decision Technical Evaluation Meeting (TEM) I

At Decision TEM I, the OGC IP Team will present to the sponsors:

- The Initiative Architecture Recommendation
- The Demonstration Concept Recommendation
- Evaluation of the RFQ/CFP responses
- Selections for awards of cost-share funding.

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

- Communications Plan
- Sponsor Requirements

The primary decisions to be made at this TEM are:

- Is the recommended Initiative Architecture workable? If not, how to make it workable.
- Which RFQ responses, or subset thereof, should be provided cost-sharing funds and at what level given all inputs?
- Is the Demonstration Concept workable? If not, how to make it workable.
- Are the management approach and the Communications Plan reasonable and complete?

Following Decision TEM I, the Initiative Manager will begin to contact selected organizations based outcomes of discussions during TEM I. The Initiative Manager will revise plans and concepts accordingly and make budgetary adjustments based on sponsor inputs.

4.1.2.5 Decision TEM II

At Decision TEM II, the OGC IP Team will present to the sponsors:

- The revised Initiative (System) Architecture
- The revised Demonstration Concept
- Updated Participant Selections

The primary decisions to be made at this TEM are:

- Is the revised Initiative Architecture workable? If not, how to make it workable.
- Are the participant selections correct and affordable?
- Is the Demonstration Concept workable? If not, how to make it workable.
- Are the management approach and Communications Plans reasonable and complete?

Following Decision TEM II, the IP Team will

1) Finalize the Initiative Architecture and Concept of Operation (now including the Demonstration Concept),

2) Begin to insert specific information into the SOW template for each selected participant organization, and

3) Adjust description of task specifics for all participants using the Participant Agreement template.

The Initiative Manager will identify participant primary and alternate POC for Technical and Business matters. The output of Decision TEM II will be a final Initiative Architecture and Demonstration Concept.

4.1.3 Kickoff Workshop

The project will be launched officially with a Kickoff Workshop meeting. Prior to the Workshop meeting all the participants must commit to a preliminary Statement of Work (SOW), with the understanding that their SOW may change somewhat during the Workshop, as the participants, architects and sponsors gain better understanding of the project scope, architecture needed, and implementation issues. Following the Workshop, all participant organizations must sign a Contract, based on the final SOW, that includes a description of the assigned work items in Section 3 of this Annex A, subject to any mutually agreed changes decided during the Workshop.

The Workshop will address two development activities in the OGC IP process: 1) component interface and protocol definitions, and 2) demonstration scenario development. The demonstration scenarios used in project will be derived from those presented in the RFQ and other candidates provided by OGC and the sponsors.

The two development activities will interact and affect each other, and the interaction will be iterative. During the Workshop, both activities will begin with a preliminary specification development provided by the IP Team and the Sponsors, and other assets that participants bring to the Workshop. Participants will be asked to provide technical recommendations to address any perceived shortfalls and that may also be included in the final Engineering Report as factors or considerations. The Initiative Manager will lead plenary meetings for the exchange of information.

An additional product of the Workshop will be a development schedule that defines specific milestones in the Interface Development and Demonstration Development activities. These milestones will include component-to-component interactions across the interfaces under development, and component insertion into demonstration scenarios. Milestones for Technology Integration Experiments TIEs) will be identified and planned during the Specification Development activities (See WBS task items 6 and 8.3).

During the Workshop, participants will nominally organize into teams to 1) begin developing component interface definitions and use cases; and 2) to begin developing the demonstration scenario and uses cases for the Pilot initiative. Interface design and demonstration design

activities should be shared and coordinated to ensure they are developed to achieve common objectives based on the scenario, use cases and specific requirements of the RFQ/CFP. Each participant organization is expected to have systems and/or software engineers attend the workshop to contribute in the initial assessment and interaction of the interfaces. This may include UML modeling of the interfaces.

Workshop participants and IP Team prepare presentations to facilitate communication and common understanding, to describe how components to be used in the initiative scenario interface with one another. The scenario design must account for the requirements and dependencies of the overall initiative, including client designs, server designs, service interfaces and encodings. Live presentations of contributed hardware components are welcome as well, but not required.

Technical plenary sessions will be conducted during the course of the Workshop. The Plenary sessions are intended to allow participants working on interface and protocol definitions to interact with participants working demonstration development. These plenaries will use UML use case and UML sequence diagrams to describe the interaction of the scenario and demonstration development and the interface definition effort.

4.1.4   IMIS IoT Interface and Demonstration Development

This section defines an initial concept for the conduct of development activities in this initiative. The actual schedule and further information will be provided at the Initiative Workshop.

4.1.4.1   Interface Development

This Interface Development (ID) Phase corresponds with WBS Tasks 6, 7 and 8 and their related subtasks. The schedule and further information will be developed and provided at the Workshop.

During the ID phase, the Technical Architecture (System Architecture) will be refined while groups of participants work on development of specific components. Interface development work will also be shaped by the Scenario and Data Development tasks. Progress on demonstration and scenario development provides details necessary to identify key actions and behaviors of "actors" in the scenarios, which are needed as clear, measurable, short-term goals for the technical development teams to pursue. The technical implementation activity also provides feedback to the demonstration scenario and data preparation activities. This mutual interaction will allow problems and successes to surface early, and will guide early TIEs, without waiting until Demonstration Integration and testing time (See WBS task item 8 and related sub-tasks). Demonstration Integration and Testing will integrate already tested interfaces into a larger, cohesive unit capable of supporting the end-to-end nature of the scenarios.

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 Architecture shall test interfaces for component accessibility, behavior, and most important, interoperability. The 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 initial interface design, interface construction, component creation, and integration of the interface with application logic. Server components under test shall have data loaded to allow client software 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. Participants for components under test are expected to provide appropriate documentation to allow the successful conduct of these experiments. Participants are expected to upload or update a reference

to their components on the OGC project portal or wiki for each TIE. Participants shall report the outcome of TIEs to the project email list and the project architecture team.

This IMIS IoT project will conduct development and testing in a series of short duration Sprints that each focus on a limited and defined set of requirements to be addressed.

These monthly software / hardware development sprints and informal demonstrations will contribute to the refinement of the overall pilot framework. Design and development work will be coordinated through weekly web conferences and web-based collaboration tools. To the extent possible, software code, hardware designs, tests, and other documentation will be managed and made accessible for review and testing on GitHub. Informal demonstrations of developed software and hardware components will be organized on a bimonthly basis and wherever possible deployed as a persistent online capability.

Issues exposed in each Sprint will drive requirements for the following Sprint that include interface definition, refinement, coding, and testing.

The Technical Architecture in Annex B describes a notional architecture that represents an initial set of services and interface mechanisms. Individual items in the notional architecture are to be refined during the Workshop meeting and will be further refined during the interface design phase. Since development will occur in a series of Sprints, it is expected there will be periods of development followed by a collaborative retrospective among the various component developers in preparation for the next Sprint. This will allow for issues to be resolved and documented in order to avoid divergence between comparable components (i.e., two servers) or dependent components (i.e., servers and clients).

4.1.4.2   Demonstrations

This activity builds upon the initiative characteristics developed during the Workshop demonstration scenario design and creation discussions. To be successful, participants must execute four activities—designing a demonstration, building a demonstration, testing the live demonstration, and packaging the demonstration on presentation media.

Capitalizing on the Use Case work performed at the Workshop, the demonstration development aims to expand these initiatives in four design areas—completing demonstration storyboards, finalizing specifications, finalizing datasets and providers and client applications to exercise the various services for the demonstration.

- Review and Finalize Storyboards—participants identify and refine the relationships between the data, the sponsor scenarios, and the components.
- Finalize component interfaces — given the nature of work during a pilot, some inconsistencies may remain between specifications and interfaces, and between different implementations. Participants must identify and resolve these differences with appropriate solutions.
- Finalize supporting data—access to the appropriate data is essential to exercising the initiative architecture and capturing a representative demonstration. Participants clearly must ensure that appropriate data exists and is available.
- Finalize nature and extent of datasets – where applicable, OGC Implementation Specification conformant data sources are preferred. However, given the nature of the various sensors and data feeds available, this may not always be possible. Other important issues are the quality, availability, schema, and interoperability of the datasets.
- Manage Supporting datasets – On-line supporting data requires that the participants identify the data stores, availability, throughput limitations, and data loading process. Successful execution of data pre-staging will require the participants to have a data plan, so valuable time is not lost due to inadequate preparation.

- Incorporate supporting datasets – participants must identify how data will process through initiative components to be exercised for the demonstration.

The elements of the demonstrations include but are not limited to the following:

1. Deployed service components and clients
2. Supporting datasets, schemas, schema instances
3. Supporting documentation, installation instructions, scripts, etc.

Participation in demonstration exercises is predicated upon full engagement with development, testing, and planning activities throughout this initiative.

4.1.5   Network Integration and Solution Transfer

Network Integration will be complete when the interfaces and demonstrations developed during the interface development and demonstration development have been integrated into the OGC Network initiative infrastructure. This activity will result in configuration-controlled components that are considered stable enough to use on a pilot basis.

Solution transfer entails the deployment of software components developed during the pilot at a data provider facility unless other arrangements have been proposed and agreed. This task will be complete when sufficient documentation or instruction has been provided, and adequate licensing procedures completed, to allow the Sponsor organizations to exercise and evaluate and deploy these products or product prototypes. Solution transfer is not required for all components.

4.2   Progress Reporting

The OGC IP Team will provide monthly progress reports and briefings to the Sponsors pertaining to the current status of the initiative. The OGC IP Team and the sponsors intend to provide regular status reports about the program to the OGC Technical Committee, Planning Committee, and the OGC Strategic Member Advisory Committee. Participant presentations to the TC will include presentations on Engineering Reports and Demonstration scenarios.

4.3   Integrated Initiatives

Other ongoing IP activities may present opportunities to support this initiative and be coordinated with the activities within this initiative. Any such resources and related activities may be integrated with those of this initiative in order to take advantage of economies of scale, and possibly to explore the deployment of innovations coming from this initiative.

5   Communications Plan

5.1   Overview

This section describes the Communications Plan for this IMIS IoT initiative. The plan includes a defined OGC approach as well as policies and procedures for effective communications among selected organizations, participants, sponsors, and the OGC Interoperability Program (IP) Staff also referred to as the IP Team.

Each organization, regardless of any teaming arrangement, shall provide a designated Point of Contact (POC) who will be available for scheduled communications about project status. That POC shall identify alternatives that will support the designated POC in scheduled activities and represent the organization as-needed in *ad hoc* discussions of IP issues. The designated and alternative POCs shall provide contact information including their e-mail addresses and phone numbers. All proposals shall include a statement or documentation of their understanding, acceptance, and handling of the communications plan.

OGC will designate technical Team Leaders for activities described in the Work Breakdown Structure for this Initiative. The Team Leaders shall work with the IP Team, responsible participants, and the sponsors to ensure that project tasks/activities are properly assigned and executed. The team leader is accountable for activity and schedule control and team communication. They must also raise issues of concern in a timely manner regarding schedule slippage or resource issues to the IP Team.

5.2   Communications Plan Details

The following objectives of the communications plan are directed to one or more tasks/activities in the WBS identified in Section 3 and provided in Appendix to this Annex A:

- Provide timely and appropriate notifications to participants of events, deadlines, and decisions that affect them
- Keep participants apprised of the status of all participants to ensure coordination and cross-communication
- Participants need to post items of interest, status reports, and software for distribution amongst the participants
- Participants need to provide software and/or data for installation at various support sites to IP Staff or other participants
- Participants need to communicate/discuss and resolve ongoing definitional and development issues and related solutions among the affected groups and team

The following tools are implemented for use during this initiative:

- Interoperability Program **email reflector** (imis-iot@lists.opengeospatial.org)
- **Public project web site** (http://www.opengeospatial.org/projects/initiatives/133)
- Project W**iki** site for team collaboration
- Web portal (http://portal.opengeospatial.org/) with the following modules:
  – **Calendar** for assigning, viewing and coordinating schedules
  – **Contact list** of participants, staff and other key individuals
  – **Discussion Forum** for technical discussions
  – A web-based **file upload** mechanism
  – **Project timeline** tracking
  – **Action items** tracking, and
  – A procedure for arranging, announcing, and executing **teleconferences**.

Each of these tools is described below.

5.2.1   IMIS IoT Email Reflector

Electronic mail communications should be sent to the single email reflector for the IMIS IoT project. This email list is imis-iot@lists.opengeospatial.org. All technical discussions will take place on this email list. Reminders will be issued if the guidelines are not used.

Participants should carefully consider the subject of email. To facilitate sorting, email to this list will automatically contain the Prefix in the Subject line of each message: [IMIS-IoT].

The project email list can receive heavy traffic. In order to facilitate efficient handling of message traffic and to reduce redundancy, all replies will go to the list not the sender. OGC is currently using the Mailman software package to manage and maintain our lists. Mailman allows project users to customize many preferences, for example, you can change your settings to allow for Mailman to digest the messages per day, to receive "no mail" when you are on vacation, etc.

PLEASE NOTE: the email reflector is <u>not</u> intended for exchanging files with others. Rather, a procedure for uploading files to the project web sites is described below. When files are uploaded, automatic notification may be sent to participants.

5.2.2 IMIS IoT Public Web Site and Participant Portal

A Portal project will be created within the OGC member portal for the IMIS IoT initiative

Figure 2 below shows the initial hierarchy of the overall portal information system and the IMIS IoT portal project.
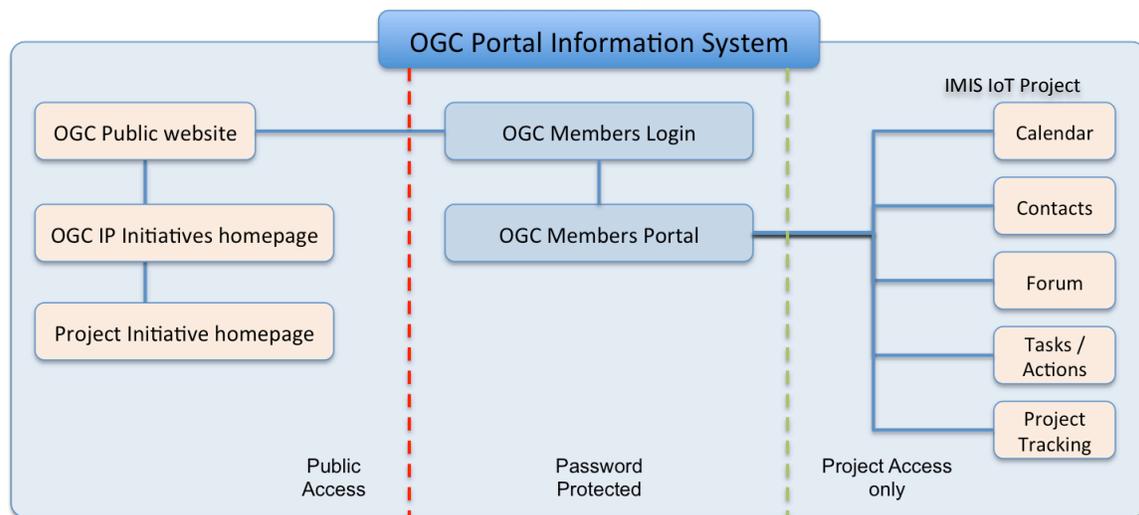
Figure 2—IMIS IoT Portal project within the OGC Portal Information System.

The initial pages and their content are described here:

- OGC Portal Information System—Repository of important current and historic data regarding everything from requirements and use cases, to contact information and documentation status. There are various levels of access within the OGC Information System. This asset will continue to grow and mature.
- OGC Public Website—publicly available information to help aid in the process of Specification Development.
- OGC Members Portal—A valuable resource for all members to get the latest information from the Specification Program
- OGC IP Initiative Homepage—Links to archived, current and future IP Initiatives:

  (http://www.opengeospatial.org/initiatives)

- Project Initiative Homepage—Publicly accessible home page for this Initiative effort
- OGC Members Portal - User specific page giving basic tools and information based upon the users Login Access
- Calendar - Calendar for assigning, viewing and coordinating schedules
- Contact Information - a listing of the participants, Staff and other Key individuals
- Wiki – a web or project-specific pages for collaborative editing of its content and structure by project users
- Task/Action Items - Action Items tracking
- Project Tracking - Project timeline tracking

Although the project portal will begin with the above layout, it may change and evolve over the life of the project. Participants who would like to contribute content should follow the directions in the next section for submitting material for the project portal site.

5.2.3   Web-Based Upload Mechanism

Participants that wish to upload materials onto the project portal described above may transfer these materials to any of the file upload locations described in this section. Participants should follow the procedure described below to ensure effective communication of file uploads.

<u>PLEASE NOTE</u>: The preferred mechanism for sharing files with other participants is via upload to portal with a reference to the storage location on the portal via a URL. This mechanism reduces load on email servers and lists; and eliminates the need for those who have no need to receive files from doing so, while making sure that all parties are informed of the availability of files.

Portal Access and Posting

1. The participant shall login to the OGC members' portal via a personal log-on using a web browser. (http://portal.opengeospatial.org/) using their assigned individual Username and Password. Project participants or observers can request access to the project portal by contacting the Initiative Manager. Note that project Observers typically do not have permission to upload files to the project portal; however, contact the Initiative Manager if the need arises.
    a. Log into the Portal with assign Username and Password
    b. Select the project in the "Project Quick Selector" drop-down on the right end of the top navigation menu.
2. In the project portal, the second tier Navigation Menu has a tab labeled "Files". Select this tab. You are now viewing the File Manager Web page for the portal project.
3. The participant may upload a single file at a time by selecting the "New File" link or icon. File uploads may be packaged (even if only a single file) using one of several formats:
    a. an archive format (such as WinZip for Windows-based submissions)
    b. tar and Gzip
    c. tar and compress for Unix-based submissions.
4. The participant should provide certain metadata for tracking and recognizing the files on-line.
    a. **Title**: *title of the submission*
    b. **Authors**: *work group or area for which the document was developed*
    c. **Description**: or abstract, *a paragraph describing the purpose and content of the submission, and*
    d. **OGC Doc Type**: identify the type of document for the upload,
    e. **Upload File**: *submitted file to be selected from the submitter's system.*
5. Click "Go" on the "Artifact Details" dialog window.

5.2.4   Project Wiki

A wiki site will be established for project collaboration purposes. This wiki will be a location for group collaboration, preparation and editing of raw content that may be further developed as content for an ER or for collaboration and coordination for task activities that includes teleconference meeting notes, preliminary designs, Technology Integration Experiments (TIE) activities and results, description of service capabilities, endpoints or for schema development to name a few.

When the editor(s) and contributors reach consensus on the form and content for a publication (for example an ER), it should be moved to the Project Portal where it can be controlled (with versions) in a more formal manner.

5.2.5   Teleconference / GoToMeeting Procedure

In general, any teleconference may involve either or both audio and webcast connections. The project will set up a standing teleconference time, usually occurring each week, with voice line and GoToMeeting (as needed) reserved for the duration of the project. OGC maintains a GoToMeeting account, as a primary and preferred resource for teleconferences using Voice Over Internet Protocol (VoIP), which avoids international connection charges. GoToMeeting sessions are accompanied by a list of in-country dial-in phone numbers for attendees to use when they may only have access to a phone connection for a particular meeting.

Whenever necessary, participants may schedule additional teleconferences in coordination with the Initiative Manager or Initiative Architect.

In addition to GoToMeeting resources, OGC also maintains a sufficient number of telephone/audio-only lines to accommodate several simultaneous teleconferences without conflict. Portal resources are shared among OGC TC working groups, the OGC Planning Committee, Board of Directors, and executive staff so plan ahead to ensure availability.

Guidelines described below have evolved over time to ensure productive and efficient use of these teleconference resources.

There are three phases in the execution of a project teleconference. These phases are initiation, planning, and execution. The procedure for each phase is defined below.

5.2.5.1   Teleconference Initiation

Due to the need to carefully manage the resources of the IP effort, a teleconference must be appropriately planned and coordinated with the Initiative Architect and the IP Initiative Manager. Before making a request, always check the Events Calendar on the OGC Members Portal, to avoid obvious conflicts with other scheduled teleconferences. However, depending on the requesting participant's position and access permissions, not all scheduled events may be visible. For example, some OGC committee meetings are only visible to committee members and OGC staff. This is the main reason for following the guidelines below.

An **authorized discussion leader** must lead a teleconference. These individuals are typically identified during the Kickoff Workshop. However, any participant may initiate a teleconference by first contacting an designated discussion leader to pre-plan the teleconference.

The discussion leader must then coordinate with the IP Initiative Manager or Initiative Architect to set up the meeting.

Approval is gained by sending an email with the subject line "IP Teleconference Request" to the Initiative or Operations Manager for IMIS IoT with the following format and content.

1. *Proposed Date and Time:* the proposed date and time
2. *Purpose:* a description of the purpose of the teleconference
3. *Designated Discussion Leader:* identify the designated discussion leader; prior coordination with Initiative Architect or Initiative Manager, if necessary to ensure adequate facilitation is available
4. *Participants:* expected audience or participants needed for the meeting; include name, organization, and email for attendees who may be subscribed to established project email reflectors used for the meeting announcement.

5. ***Resources Required****:* identify appropriate meeting resource: GoToMeeting (preferred) or teleconference line (audio only) resource
6. ***Expected Duration****:* planned duration of the teleconference
7. *****Agenda****:* an agenda, including an estimate of time to be spent on each topic, as appropriate to facilitate meeting progress

Approval and setup should coordinated well in advance, to avoid conflicts with other telecon schedules, but in any case should be planned **at least two business days prior to the proposed teleconference date**. It is recommended that **teleconferences involving participants on multiple continents** (Australia, Europe, Asia, and North America) **should be scheduled and announced at least three days in advance**.

Once the schedule has been agreed upon a member of OGC IP Team or Teleconference Moderator will setup the teleconference by entering the meeting information into the portal calendar and reserving the teleconference resource.

When necessary to resolve scheduling conflicts, the IP Initiative Manager will work with the requesting individual, organization, or group to reach a satisfactory solution to all.

5.2.5.2 Teleconference Planning

A member of the OGC IP Team or designated Meeting Organizer will plan the teleconference. Members of the project will be notified of the meeting with details that include date, time, proposed agenda and other information needed to facilitate the meeting.

5.2.5.3 Teleconference Execution

Required participants are expected to join the teleconference at the appointed date and time.

Teleconferences may be extended depending on availability of resources and required participants. The designated teleconference leader is responsible to keep the teleconference on schedule with the agenda. This means that vital agenda items should be covered early in the agenda. If the meeting should take longer than planned, the teleconference leader should adjust the agenda or plan coordinate with attendees for an additional date and time to continue.

The teleconference leader will prepare minutes of the teleconference. The notes should contain a record of decisions reached, action items (including a description and action item holder), and issues for resolution. The meeting minutes will be posted on the project portal or on the wiki page.

5.3 Progress Reporting

The OGC IP staff will provide regular (monthly) progress reports and briefings for the IMIS IoT project to the sponsors. To do this, **participants must submit technical and business progress reports by the 6th of each month, as detailed in WBS Section 1.3.1 of this Annex A**. Besides reporting progress in terms of "percentage complete" on each of the deliverables expected, another purpose of the **monthly technical reports** is to capture and report:

– Record of decisions and actions taken
– Results obtained
– Lessons learned
– Recommendations for any changes to the work program.

This becomes a valuable record of the project activity experience. The purpose of the **monthly business report** is to provide the Initiative Manager, Financial Officer, and IP Executive Director with a quick indicator of the project health, from each Participant's perspective. These reports have proved crucial to identifying underlying issues needing to be addressed, which may not have

received adequate attention in the weekly telecons and other daily communications. Initiative Architect consolidates monthly technical reports to send to the Initiative Manager by the 15th of each month.

The Initiative Manager then consolidates these into the progress reports submitted to the sponsors by the 20th of each month. The OGC IP staff and the sponsors also provide status reports about the program to the OGC Technical Committee and the OGC Planning Committee as feasible and appropriate. At those times the participants may present interface designs and other reports to the TC and PC. Demonstration scenarios and the architecture to support those demonstrations would be included in these presentations.

OGC IP staff will review action item status on a weekly basis with Team Leads and participants that are responsible for the completion of those actions. Action item status reports will be posted to the IMIS IoT web sites each week. Email will be used to notify Team Leads and responsible parties of pending actions for a given week.

6   Interoperability Program Code of Conduct

6.1   Abstract

This section outlines the Principles of Conduct that shall govern personal and public interactions in any OGC activity. The Principles recognize the diversity of OGC process participants, emphasize the value of mutual respect, and stress the broad applicability of our work. A separate section of the Policies and Procedures details consequences that may occur if the Principles of Conduct are violated.

6.2   Introduction

The work of the OGC relies on cooperation among a broad cultural diversity of peoples, ideas, and communication styles. The Principles for Conduct guide our interactions as we work together to develop multiple, interoperable technologies for the Internet. All OGC process participants aim to abide by these Principles as we build consensus in person, at OGC meetings, in teleconferences, and in e-mail. If conflicts arise, we resolve them according to the procedures outlined in the OGC TC and IP Policies and Procedures.

6.3   Principles of Conduct

     OGC process participants extend respect and courtesy to their colleagues at all times.

OGC process participants come from diverse origins and backgrounds and are equipped with multiple capabilities and ideals. Participants in related tasks are often employed by competing organizations. Regardless of these individual differences, participants treat their colleagues with respect as persons--especially when it is difficult to agree with them. Seeing from another's point of view is often revealing, even when it fails to be compelling.

English is the de facto language of the OGC process, but it is not the native language of many OGC process participants. Native English speakers are requested to speak clearly and a bit slowly, and to limit the use of slang in order to facilitate the comprehension of all listeners.

     OGC process participants develop and test ideas impartially, without finding fault with the colleague proposing the idea.

We dispute ideas by using reasoned argument, rather than through intimidation or ad homonym attack. Or, said in a somewhat more consensus-like way: "Less heat and more light."

OGC process participants think globally, devising solutions that meet the needs of diverse technical and operational environments.

The goal of the OGC is to maintain and enhance a working, viable, scalable, global set of interfaces and protocols that provide a framework for interoperability in the geospatial domain. Many of the problems we encounter are genuinely very difficult. OGC participants use their best engineering judgment to find the best solution for the whole domain of geospatial interoperability, not just the best solution for any particular network, technology, vendor, or user. We follow the intellectual property Principles outlined in http://www.opengeospatial.org/legal/.

Individuals who attend OGC facilitated meetings are prepared to contribute to the ongoing work of the membership and the organization.

OGC participants who attend OGC meetings read the relevant Pending Documents, RFCs, and e-mail archives beforehand, in order to familiarize themselves with the technology under discussion. This may represent a challenge for newcomers, as e-mail archives can be difficult to locate and search and it may not be easy to trace the history of longstanding Working Group, Revision Working Group, SIG, Standard Working Group, Domain Working Group or Initiative debates. With that in mind, newcomers who attend OGC meetings are encouraged to observe and absorb whatever material they can, but should not interfere with the ongoing process of the group. OGC meetings run on a very limited time schedule, and are not intended for the education of individuals. The work of the group will continue on the mailing list, and many questions would be better expressed on the list in the months that follow.

It is expected that many of the participants working on related tasks are from competing organizations. To preserve and sustain our productive environment in which ideas are discussed openly, and all participants' viewpoints are respected, it is imperative that participants refrain from using OGC resources (mail lists, portal, wiki, teleconferences, etc.) for commercial messages favoring any particular products, business models, or ideology.

6.4   Acknowledgements

OGC acknowledges the work done by the IETF on a code of conduct (specifically RFC 3184). These principles of conduct are modeled on their work.

Appendix: WBS Outline

The following Work Breakdown Structure (WBS) is derived from the OGC Interoperability Initiative Process Framework. This WBS should be interpreted in the following manner:

- Items that are shaded gray are either IP Team tasks, have already been completed, or are not required for this Initiative.
- Bold text is a task grouping or subtask grouping.
- Plain text indicates tasks against which proposing organizations should respond.
- Italic text represents the task explanation.

1   Coordination

1.1   Collaborative Environment

The following subtasks are <u>*mandatory*</u> *for selected organizations.*

1.1.1   Routine and ad hoc telecons as assigned

The proposing organization shall provide a technical representative and an alternate to participate in regularly scheduled telecons. If a participant organization has a representative that is requested or volunteers to participate in an ad hoc telecon, then that representative or a reasonable alternative shall join the ad hoc telecon if at all possible.

1.1.2   E-mail review and comment

The proposing organization shall provide technical representatives to participate in specification and prototypical component development discussions via the IMIS IoT *mail list.*

1.1.3   Action Item status reporting

Proposing organizations' representatives shall report the status of their work in response to any action item accepted by them in whole or part. Action Items will be assigned to relevant work groups with an identified work group leader. Action item status shall be reported to the relevant work group leader.

1.2   Initiative Plan Development

1.2.1   Project Plan Development

1.2.2   Project Schedule Development

1.2.3   WBS Development

1.2.4   Concept of Operations Development

1.3   Management

The following subtasks are <u>*mandatory*</u> *for all selected organizations.*

1.3.1   Status Reporting

Proposing organizations' business representatives shall report the status of their work as assigned to and accepted by them in their SOW. Status reports will reflect the SOW item number

and name, the "health" of the effort with <mark>green</mark> indicating optimal; <mark>yellow</mark> indicating issues have arisen that appear resolvable; and <mark>red</mark> indicating that issues have arisen that require immediate resolution or the effort will not succeed, and finally the report will describe the work done to fulfill the WBS item.

Workshop Status Report: *A <u>one-time</u> Workshop status report shall be provided by each participant organization that includes a list of personnel assigned to support Initiative. The Workshop status report shall be submitted to the portal and the Initiative Manager <u>no later than the last day of the</u> Workshop in soft copy format only.*

Thread Teleconference Meetings:

Weekly or biweekly thread-level teleconferences will be conducted and recorded in minutes posted on the portal, beginning after the Workshop. These are for verbal updates and additions of tasks and actions listed on the portal, and to respond to requests for status among participants, by the IP Team and Sponsors.

Formal Status Reports:

- *Formal status reports will be submitted on a <u>Monthly</u> basis on the portal for compilation to an overall thread and initiative status.*
- ***Due by the sixth (6th) of each month or the first Monday thereafter***.

Two kinds of status reports are required (report templates will be provided on the project portal):

Monthly Technical Report

- *Word document posted on portal, and the Thread Architect notified*
- *Narrative to describe work accomplished during this reporting period by the participant's technical team*
- *Show % Complete on assigned subtasks within a Participant's SOW (no cost or labor figures)*

Monthly Thread Summary Report

- *The IP Team will compile the participant Technical Reports into a **Monthly Summary Report**, due according to Sponsor schedule requirements each month following the completion of the Workshop.*

Monthly Business Report

- *Word document posted on portal, then the IP Executive Director, Initiative Manager, and OGC Business Manager notified*
- *Work status overview, by WBS element and name, with Green-Yellow-Red indicators*
- *Accomplishments (% completion in work and dollars)*
- *Expenditures, such as labor and Other Direct Costs – budgeted, actual, projected, and cumulative totals*
- *Identification of potential technical performance and/or cost issues and risk mitigation*
- *Summary of work expected to be performed during the next period*

Final Summary Report

- *Each participant organization shall prepare and submit a <u>final</u> monthly technical report summarizing the Participant's overall contribution to the project throughout the project from Kickoff to completion.*
- *This report shall include a <u>summary</u> description of results achieved for the participant's contribution for all assigned tasks in the project for the entire project's period of performance.*

1.3.2   Initiative Accounting

Cost-share compensation to selected organizations is typically invoiced and paid in three bi-monthly installments. The dates of these installments for the initiative will be identified in the Participant Agreement.

Business/contract representatives for selected organizations shall submit an invoice to the OGC Business Office at OGC Headquarters. The invoice shall include:

> *OGC Accounting Job Code provided in the contract*
> *Work completed during the prior period*
> *Itemized list of Deliverables*
> *The SOW budget not to exceed amount*

1.4   Communication

1.4.1   OGC Internal IP Status Briefings

1.4.2   OGC External IP Status Briefings

2   Assessments and Analysis

2.1   Organizational Capability Review

2.2   Organizational OGC Requirements Review

3   Concept Development

3.1   Sponsor Feasibility Study Review

3.2   RFT Development

3.3   RFT Response Analysis

3.4   RFT Response Review

4   Architecture Development

4.1   Operational Architecture Development

4.2   System Architecture Development

4.3   Technical Architecture Development

5   Initiative Preparation

5.1   Sponsor Planning TEMs

5.2   RFQ Development

5.3   Participant Budget Development

5.4   Contract Development

5.5   SOW/SOP Development

6   Specification Development

The Bidder's proposal shall include brief resume(s) or qualifications of technical representative(s) to lead Specification Development effort for each or applicable tasks listed below. All selected organizations shall send technical representatives to the Workshop meeting. Attendance at this meeting is mandatory for all selected organizations.

6.1   Model Development

Technical representatives of selected organizations shall develop or support the development of models that represent a service, interface, operation, message, or encoding that is being developed for the initiative. These models may be in UML or some other appropriate modeling language. The final form of models developed in the initiative should be posted to OGC Network^{TM} (http://www.ogcnetwork.net/).

6.2   Schema Development

Technical representatives of selected organizations shall develop or support the development of schemas that specify an interface that is being developed for the initiative. These schemas will be written in XML Schema or some other appropriate language. All schemas developed in the initiative will be posted to OGC Network^{TM} (http://www.ogcnetwork.net/).

6.3   Encoding Development

Technical representatives of selected organizations shall develop or support the development of encodings that specify an interface that is being developed for the initiative. These encodings will be specified in XML Schema or some other appropriate language. As applicable, all encodings developed in the initiative will be posted to OGC Network^{TM} (http://www.ogcnetwork.net/)

6.4   Interface Development

Technical representatives of selected organizations shall develop or support the development of interfaces that specify operations, encodings or messages that are being developed for initiative. These interfaces will be specified in XML Schema or some other appropriate language. As applicable, all interfaces developed in the initiative should be posted to OGC Network^{TM} (http://www.ogcnetwork.net/)

6.5   Specification Program Coordination

Technical representatives of selected organizations shall submit Engineering Reports (ER's) pertaining to interface developments for the initiative to the OGC Technical Committee for review. Technical representatives shall present these Engineering Reports to the relevant OGC TC working groups and work with OGC members to resolve comments or issues that the OGC members may raise with regard to the ER and the interface(s) described therein.

7   Component Development

Technical representative(s) of selected organizations shall lead Component Development effort, as applicable, for each of the tasks listed below.

7.1   Prototypical Interoperable Software Development

Selected organizations shall either develop software or modify existing product software to provide the interfaces necessary as assigned for this initiative.

7.1.1   Server software development

Selected organizations shall deploy or develop server software or modify existing product server software to exercise the interfaces developed or enhanced under the Specification Development task in item 6 above for this initiative. The selected organizations will make this server software available for review, testing and input during the course of this initiative.

7.1.2   Client software development

Selected organizations shall develop client software or modify existing client software to exercise the servers developed under the Component Development tasks of this initiative. Selected organizations shall develop client software to support their server software or make arrangements with other participants to use their client software to exercise other servers during the course of the initiative. This is subject to approval by the IP Team and sponsors to ensure that the client is appropriate for exercising the functionality of the relevant server. If the proposing organization is developing server software and client software, then the client software shall exercise all initiative or other OGC services provided by their server.

8   Testing and Integration

8.1   Configuration Management

8.1.1   CM Plan Development

The selected organization shall provide a representative to develop a configuration management plan for interfaces and components developed during the initiative.

8.1.2   Initiative CM

The selected organization shall provide a representative to exercise the configuration management plan for interfaces and components developed during the initiative.

8.2   Infrastructure Setup

The selected organization shall deploy its components on the same hardware and operating systems for their final deployments to the extent possible. ***This item is mandatory for all organizations proposing to provide software and / or hardware components for the initiative.***

8.3   Technology Integration Experiments (TIE)

8.3.1   Iterations 1-N

8.3.1.1   Component Interface Test

The selected organization shall provide a technical representative to conduct TIEs that exercise server and/or client component software's ability to properly implement the interfaces, operations, encodings, and messages developed during this initiative. There will be multiple TIEs during the course of the initiative that will exercise various interfaces, operations, encodings, and messages developed during the initiative. ***This item is mandatory for all organizations proposing to provide software components for this initiative.***

8.3.1.2   Test Result Analysis

The selected organization shall provide a technical representative to report the outcome and relevant software reporting messages from TIEs in which the proposing organization participates. The results of these TIEs should be coordinated with the Initiative Architect and reported on the initiative email list, on a designated page of the project wiki and within Monthly Status Report. ***This item is mandatory for all organizations proposing to provide software components for this initiative.)***

8.4   System Tests

8.4.1   Functional Test

The selected organization shall demonstrate the functionality of all software delivered against the Scenario and Use Cases described in Annex B, Technical Architecture. ***This item is mandatory for all organizations proposing to provide software components for this initiative.***

8.4.2   Interface Test

The selected organization shall demonstrate conformance with the appropriate OGC interfaces by using the OGC CITE Web site where the appropriate test suites are available. ***This item is mandatory for all organizations proposing to provide software components for this initiative.***

9   Solution Transfer

9.1   Software Installation

The selected organization shall provide endpoint links for relevant software components deployed in this initiative. This may be accomplished by making the software component(s) available from an open site on their network –OR-- by installing it on a sponsor or other host machine on the OGC Network. If the latter option is taken, then the selected organization shall provide a technical representative to install the software component(s). ***This item is mandatory for all organizations proposing to develop software components for this initiative.***

9.2   Software Integration

9.3   Data Loading

The selected organization shall provide a technical representative to load data to any server components the proposing organization may provide. This task includes data loading on the Participant's server OR on the OGC Network based servers if deployed there. ***This item is mandatory for all organizations proposing to develop server components for this Initiative.***

10 Demonstration

10.1 Use Case Development

The selected organization shall provide a technical representative to develop or support the development of a scenario and associated use cases that define and explain the utility of the components or capabilities developed during this Initiative. These scenario/use cases shall be used to provide a basis for demonstration storyboards and the demonstration itself.

10.2 Storyboard Development

The selected organization shall provide a technical or business representative to develop or support the development of the demonstration storyboards that will define the structure and content of the demonstration to which their components contribute.

10.6 Demonstration Preparation and Delivery

*The selected organization shall provide a technical and/or business representative to develop or support the development of the demonstration that will exercise the functionality of the capabilities developed during this Initiative. The representative(s) will also support the demonstration event(s) as required. The proposing organization will maintain server and client software developed for the initiative **for a period of no less than one year after the completion of the Initiative demonstration**. **This item is mandatory for all organizations proposing to provide software components for this Initiative.***

11 Documentation

11.1 ER Development

*Selected organizations shall provide a technical representative to serve as editor of a relevant Engineering Report (ER). Not all organizations responding to this item will be required to provide an editor; alternatively however, each participant shall support the editor by providing authors to contribute applicable material for sections of the ER and for reviews of the Draft ER. **The ER is the deliverable of the work items within this Initiative.***

Participants shall use the appropriate Document template posted on the OGC portal when preparing reports for submittal as part of this Pilot initiative:

In some cases, the documentation required may be a Change Request to an existing OGC standard. All Change Requests are to be entered into the public, online CR system, found here: http://www.opengeospatial.org/standards/cr

11.2 System Documentation Development

11.2.1 Functional Specification

11.2.1.1 Architectural Overview

*The selected organization shall provide a technical representative to develop an architectural overview of their software component(s) relevant to the Initiative architecture. **This item is mandatory for all organizations proposing to develop software components for this Initiative.***

11.2.1.2 Scenario and Use Cases

*The selected organization shall provide a technical representative to refine the scenario and use cases to show the functionality of their software components in the context of the Initiative architecture. **This item is mandatory for all organizations proposing to provide software components for this Initiative.***

11.2.1.3 UML System Models

The Selected organization shall provide a technical representative to develop valid UML documents describing information models and architectures involved in their contribution to this Initiative.

11.2.1.4 System Configuration

The selected organization shall provide a technical representative to develop a detailed document describing the combined environment of hardware and software component(s) that compose their contribution to this Initiative. ***This item is mandatory for all organizations proposing to develop software components for this Initiative to be installed at a data provider or other host sites.***

11.2.2 Installation Guide

The selected organization shall provide a technical representative to develop an installation guide for their software component(s). ***This item is mandatory for all organizations proposing to develop software components for this Initiative to be installed at a data provider or other host sites.***

11.2.3 Training Material & Users Guide

The selected organization shall provide a technical representative to develop a User's Guide and Training Materials pertaining to their software component(s) developed or modified for this Initiative. The documents shall be provided to the IP Team and sponsors to support their ability to demonstrate the proposing organization's contributions to the initiative. ***This item is mandatory for all organizations proposing to develop software components for this Initiative.***

11.3 Planning Study Report

12 Compliance Test Development

Technical representatives of selected organizations shall develop Draft Compliance Test documentation pertaining to an interface developed or enhanced for this Initiative. Compliance test documentation shall be submitted as part of an associated Engineering Report. This task includes coordination with OGC Compliance Program. Bidder's proposals shall address this task along with Task 6, Specification Development and Task 11, Documentation in this Annex.

12.1 Summarize TIEs, demo results and data issues

Technical representatives of selected organizations shall provide information detailing progress pertaining to the implementation, integration, or enhancement of an interface by including TIE results, lessons-learned from the demo, and particular data issues.

12.2 Compliance Test

Technical representatives of selected organizations shall outline all of the necessary information to conduct a valid compliance test of the interface, including the sub items below

12.2.1 Test Cases

Technical representatives of selected organizations shall outline a valid compliance test for the interface. A valid compliance test will include identification of all required and optional server requests in the interface and the acceptable results for testing servers, the syntax checks to perform for testing client requests; an explanation of an acceptable verification of the results (machine, human, etc.); a list of expected/valid warnings or exceptions to interface behavior; a matrix of test dependencies and explanation of ordering tests appropriately for inherent tests and dependencies.

12.2.2 Data

Technical representatives of selected organizations shall identify appropriate data sets for use in conducting a compliance test for an interface.

12.2.3 Recommendations

Technical representatives of selected organizations shall document recommendations to resolve issues with the current state of the interface, or with the compliance tests.