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Request For Quotation

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In the

**FEDERAL AVIATION ADMINISTRATION (FAA) SPECIAL ACTIVITY
AIRSPACE (SAA) DISSEMINATION PILOT**

(FAA SAA DISSEMINATION PILOT)

Annex A - Work Breakdown Structure

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Annex A: FAA SAA Dissemination OGC IP Work Breakdown Structure

1 Introduction

This document describes the FAA SAA Dissemination OGC IP Work Breakdown Structure for this Web Services Initiative.

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 Web Services Initiative Work Breakdown Structure.

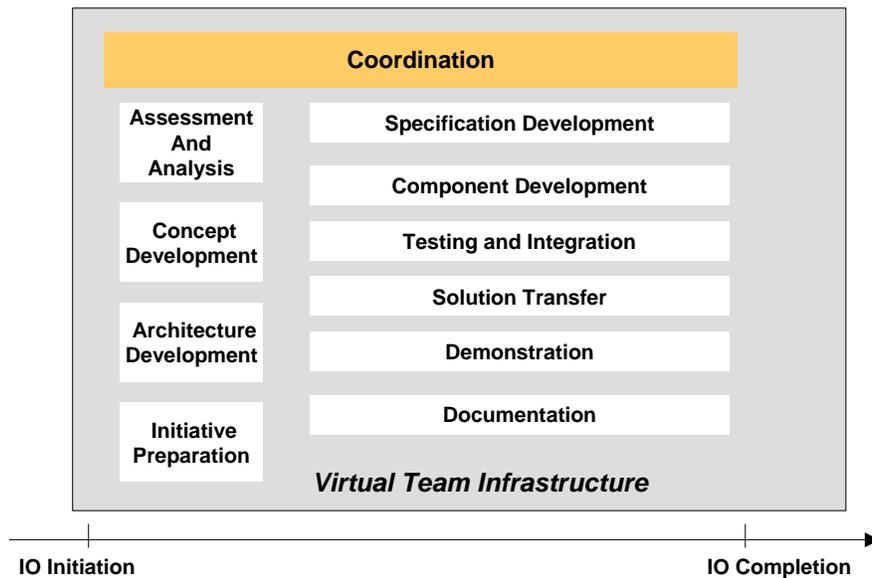


Figure 1: Interoperability Initiative Process Framework.

2.1 Coordination

Enables overall Initiative coordination between OGC Staff, OGC IP Team, Sponsors, Participants, and other TC/PC Members as required. Initiative Coordination includes 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 and other organizations such as ISO. This task does not include IP Business Development functions.

2.2 Specification Development

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

2.3 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.

2.4 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).

2.5 Solution Transfer

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

2.6 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.

2.7 Documentation

This Task ensures development and maintenance of the pre-specification, pre-conformant interoperable OpenGIS technologies (including Draft Engineering Reports) and the systems level documentation (example user documentation, etc.) necessary to execute the Initiative. This task may include coordination with OGC Specification Program activities including the Documentation Team.

3 FAA SAA Dissemination OGC IP Work Breakdown Structure (WBS)

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 grayed out are either IP Team tasks, have already been completed, or are not required for the FAA SAA Dissemination OGC IP Initiative.
- Bold text is a task grouping or subtask grouping.
- Plain text indicates tasks against which proposing organizations should respond.
- Italic text indicates the task explanation (These task explanations are valid only for FAA SAA Dissemination OGC IP; subsequent initiatives will issue appropriate task explanations).

A proposing organization does not have to respond to all tasks below. 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 a company 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 FAA SAA Dissemination OGC IP project plan and schedule will use this WBS as a template as well.

3.1 Coordination

3.1.1 Collaborative Environment

3.1.1.1 Routine and ad hoc telecons as assigned

*Task Explanation- The selected organization shall provide a technical representative and an alternate to participate in regularly scheduled telecons or ad hoc telecons. **This item is mandatory for all proposing organizations.***

3.1.1.2 E-mail review and comment

*Task Explanation-The proposing organization shall provide technical representatives to participate in specification and prototypical component development discussions via the FAA SAA Dissemination OGC IP mailing list. **This item is mandatory for all proposing organizations.***

3.1.1.3 Action Item status reporting

*Task Explanation-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. **This item is mandatory for all proposing organizations.***

3.1.2 Initiative Plan Development

3.1.2.1 Project Plan Development

3.1.2.2 Project Schedule Development

3.1.2.3 WBS Development

3.1.2.4 Concept of Operations Development

3.1.3 Management

3.1.3.1 Status Reporting

Task Explanation- All status reporting will be conducted within the OGC portal. Business/contract representatives for selected organizations shall report the progress and status of their work as assigned to and accepted by them in their SOW following the structure of this WBS. Status reports will reflect the WBS item number and name, the "health" of the effort with green indicating optimal; yellow indicating issues have arisen that appear resolvable; and red 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.

A one-time Kickoff status report shall be provided that includes a list of personnel assigned to support the FAA SAA Dissemination Pilot initiative. The kickoff status report shall be submitted to the Initiative Manager no later than the first day of the FAA SAA Dissemination Pilot kickoff in soft copy format only.

Weekly teleconferences will be conducted and recorded in minutes posted on the portal, beginning after the Kickoff. These are for verbal updates and additions of tasks and actions listed on the portal, and to respond to requests for status by the IP Team and Sponsors.

Formal status reports will be submitted on a Monthly basis on the portal for compilation to an overall initiative status. These reports will be due by the fifth of the month or the first Monday thereafter. Two kinds of status reports are required (report templates will be provided):

- **Monthly Technical Report:** Word document posted on portal, and the Initiative Manager 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 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
 - The final monthly report shall be an overall **Participant Summary Report**, summarizing the Participant's overall contribution to the project

This item is mandatory for all proposing organizations.

3.1.3.2 Initiative Accounting

Task Explanation- Cost-share compensation to selected organizations is typically invoiced and paid in several installments. The dates of these installments for the FAA SAA Dissemination Pilot 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 the OGC Accounting Job Code provided in the contract, the work completed during the prior period, and itemized list of Deliverables. The invoice shall include the budgetary not to exceed amount. **This item is mandatory for all proposing organizations.***

3.1.4 Communication

3.1.4.1 OGC Internal IP Status Briefings

3.1.4.2 OGC External IP Status Briefings

3.2 Assessments and Analysis

3.2.1 Organizational Capability Review

3.2.2 Organizational OGC Requirements Review

3.3 Concept Development

3.3.1 Sponsor Feasibility Study Review

3.3.2 RFQ Development

3.3.3 RFQ Response Analysis

3.3.4 RFQ Response Review

3.4 Architecture Development

3.4.1 Operational Architecture Development

3.4.2 System Architecture Development

3.4.3 Technical Architecture Development

3.5 Initiative Preparation

3.5.1 Sponsor Planning TEMs

3.5.2 RFQ Development

3.5.3 Participant Budget Development

3.5.4 Contract Development

3.5.5 SOW/SOP Development

3.6 Specification Development

Task Explanation- The 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 FAA SAA Dissemination Pilot Kickoff meeting. Attendance at this meeting is mandatory for all selected organizations.

3.7 Component Development

Task Explanation-Proposing organizations should minimally respond to this task and its associated subtasks (or a subset thereof) OR to task 3.6 Specification Development.

3.7.1 Prototypical Interoperable Software Development

Task Explanation-Proposing organizations' technical representatives shall either develop server software or modify existing product server and/or client software to provide the interfaces necessary under the FAA SAA Dissemination OGC IP.

3.7.1.1 Server software development

Task Explanation-Proposing organizations' technical representatives shall develop server software or modify existing product server software to provide the interfaces under the FAA SAA Dissemination IP. Proposing organizations shall

- *Ensure that their server software is compliant with the SWIM technical requirements*
- *Make this server software available for sponsor review and input during the course of the FAA SAA Dissemination IP initiative*
 - o *Demonstration license(s) of server software shall be delivered to FAA at the end of the pilot, valid for up to one year after that date.*
- *Host their server components on their own networks. FAA will provide the necessary access to the FAA-hosted components needed for the Pilot to the server components. Details about the physical FAA infrastructure and any associated access constraints will be covered during the Kickoff.*

3.7.1.2 Client software development

Task Explanation-Proposing organizations' technical representatives shall develop/provide client software or modify existing product client software to satisfy the client use cases of FAA SAA Dissemination OGC IP in Annex B, FAA SAA Dissemination OGC IP Architecture.

Proposing organizations shall

- *Ensure that their client software is compliant with the SWIM technical requirements*
- *Make this client software available for sponsor review and input during the course of the FAA SAA Dissemination IP initiative*
 - o *Demonstration license(s) of client software shall be delivered to FAA at the end of the pilot, valid for up to one year after that date.*
- *Host their client components on their own networks. FAA will provide the necessary access to the FAA-hosted components needed for the Pilot to the client components. Details about the physical FAA infrastructure and any associated access constraints will be covered during the Kickoff.*

3.8 Testing and Integration

3.8.1 Configuration Management

3.8.1.1 CM Plan Development

Task Explanation-The Proposing organization shall provide a representative to develop a configuration management plan for interfaces and components implemented during the FAA SAA Dissemination OGC IP initiative.

3.8.1.2 Initiative CM

The Proposing organization shall provide a representative to exercise the configuration management plan for interfaces and components developed during the FAA SAA Dissemination OGC IP initiative.

3.8.2 Infrastructure Setup

3.8.3 Technology Integration Experiments

3.8.3.1 Iterations 1-N

3.8.3.1.1 Component Interface Test

*Task Explanation-The Proposing organization shall provide a technical representative to conduct formal Technology Integration Experiments that exercise server and/or client component software's ability to properly implement the interfaces, operations, encodings, and messages developed during the FAA SAA Dissemination OGC IP. There will be multiple TIEs during the course of the FAA SAA Dissemination OGC IP that will exercise various interfaces, operations, encodings, and messages developed during the FAA SAA Dissemination OGC IP. There may also be multiple iterations of a particular TIE or set thereof. **This item is mandatory for all organizations proposing to provide software components for the FAA SAA Dissemination OGC IP.***

3.8.3.1.2 Test Result Analysis

*Task Explanation-The Proposing organization shall provide a technical representative to report the outcome and relevant software reporting messages from TIEs in which the proposing organization participates. These TIE reports shall be submitted to the FAA SAA Dissemination OGC IP email list and within Monthly Status Report to be courtesy copied to the initiative architect. **This item is mandatory for all organizations proposing to provide software components for FAA SAA Dissemination OGC IP.***

3.8.4 System Tests

3.8.4.1 Functional Test

*Task Explanation – The Proposing organization shall demonstrate the functionality of all software delivered against the Use Cases in Annex B, the FAA SAA Dissemination OGC IP Architecture. **This item is mandatory for all organizations proposing to provide software components for the FAA SAA Dissemination OGC IP.***

3.8.4.2 Interface Test

*Task Explanation – The Proposing 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 the FAA SAA Dissemination OGC IP.***

3.9 Solution Transfer

3.9.1 Software Installation

Task Explanation-The Proposing organization shall provide licensed demonstration copy /copies of FAA SAA Dissemination OGC IP relevant software components for installation/integration onto the FAA SAA Dissemination OGC IP Network. This must take the form of the proposing organization installing it on a machine at the proposing organization's own site.

This item is mandatory for all organizations proposing to develop software components for the FAA SAA Dissemination OGC IP.

3.9.2 Software Integration

3.9.3 Data Loading

*Task Explanation-The Proposing organization shall provide a technical representative to load data, as needed, to any server components the proposing organization may provide. This task includes data loading to the FAA SAA Dissemination OGC IP Network based servers. **This item is mandatory for all organizations proposing to develop server components for the FAA SAA Dissemination OGC IP.***

3.9.4 Maintenance

*Task Explanation-The Proposing organization shall maintain components for a duration of 1 year beyond the end of the FAA SAA Dissemination OGC IP. During that time, the sponsor will be conducting evaluations and demonstrations of the functionality developed in the initiative. Maintenance is to include responding to requests to keep the components operational, but need not include increasing the functionality beyond that demonstrated. **This item is mandatory for all organizations proposing to develop components for the FAA SAA Dissemination OGC IP.***

3.10 Demonstration

3.10.1 Use Case Development

Task Explanation-The Proposing organization shall provide a technical representative to develop or support the development of use cases that define and explain the utility of the interfaces developed during the FAA SAA Dissemination OGC IP. These use cases shall be used to provide a basis for demonstration storyboards and the demonstration itself.

3.10.2 Storyboard Development

Task Explanation-The Proposing 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.

3.10.3 Venue Access

3.10.4 Data Requirements Assessment

3.10.5 Data Acquisition and Distribution

3.10.6 Demonstration Preparation and Delivery

*Task Explanation-The Proposing organization shall provide a technical and/or business representative to develop or support the development of demonstration that will exercise the functionality of the interfaces developed during the FAA SAA Dissemination OGC IP. The representative(s) will also support the demonstration event(s) as required. The proposing organization will maintain server and client software for a period of no less than 12 months after the completion of the FAA SAA Dissemination OGC IP demonstration. **This item is mandatory for all organizations proposing to provide software components for the FAA SAA Dissemination OGC IP.***

3.11 Documentation

3.11.1 ER Development

*Task Explanation-The Proposing organization 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 they shall support the editor by providing authors for sections of the ER and for reviews of the Draft ER. **The ER is the deliverable of the work items within the FAA SAA Dissemination OGC IP.***

Participants shall use the appropriate Document template posted on the OGC portal at the following location when preparing IP reports for submittal as part of this pilot initiative: http://portal.opengeospatial.org/index.php?m=projects&a=view&project_id=147&tab=2&artifact_id=10533)

In some cases, the documentation required is 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>

3.11.2 System Documentation Development

3.11.2.1 Functional Specification

3.11.2.1.1 Architectural Overview

*Task Explanation-The Proposing organization shall provide a technical representative to develop an architectural overview of their software component(s) relevant to the FAA SAA Dissemination OGC IP architecture. **This item is mandatory for all organizations proposing to develop software components for the FAA SAA Dissemination OGC IP.***

3.11.2.1.2 Use Cases

*Task Explanation-The Proposing organization shall provide a technical representative to refine use cases to show the functionality of their software components in the context of the FAA SAA Dissemination OGC IP architecture. **This item is mandatory for all organizations proposing to provide software components for the FAA SAA Dissemination OGC IP.***

3.11.2.1.3 UML System Models

Task Explanation- Selected organization shall provide a technical representative to develop valid UML documents describing information models and architectures involved in their contribution to the FAA SAA

Dissemination Pilot. This item is mandatory for all organizations proposing to develop UML models for the FAA SAA Dissemination OGC IP.

3.11.2.1.4 System Configuration

Task Explanation-The Proposing 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 the FAA SAA Dissemination OGC IP. This item is mandatory for all organizations proposing to develop software components for the FAA SAA Dissemination OGC IP to be installed at data provider or other host sites.

3.11.2.2 Installation Guide

Task Explanation-The Proposing 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 the FAA SAA Dissemination OGC IP to be installed at data provider or other host sites.

3.11.2.3 Training Material & Users Guide

Task Explanation-The Proposing 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 FAA SAA Dissemination OGC IP. The documents shall be provided to sponsors and IP Team to support their ability to demonstrate the proposing organization's contributions to the FAA SAA Dissemination OGC IP initiative. This item is mandatory for all organizations proposing to develop software components for the FAA SAA Dissemination OGC IP.

3.11.3 Planning Study Report

3.12 Compliance Test Development

3.12.1 Summarize TIEs, demo results and data issues

3.12.2 Compliance Test

3.12.2.1 Test Cases

3.12.2.2 Data

3.12.2.3 Recommendations