Part - Partie 1 of - de 2
See Part 2 for Clauses and Conditions
Voir Partie 2 pour Clauses et Conditions

Public Works and Government Services Canada	**Travaux publics et Services gouvernementaux Canada**

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Electronics, Simulators and Defence Systems Div.
/Division des systèmes électroniques et des systèmes de simulation et de défense
11 Laurier St. / 11, rue Laurier
8C2, Place du Portage
Gatineau
Québec
K1A 0S5

LETTER OF INTEREST
LETTRE D'INTÉRÊT

Title - Sujet
RFI for ICS Info Mngt System

Solicitation No. - N° de l'invitation	**Date**
F7048-140035/A	2014-07-14

Client Reference No. - N° de référence du client	**GETS Ref. No. - N° de réf. de SEAG**
F7048-140035	PW-$$QF-029-24572

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
029qf.F7048-140035	

Solicitation Closes - L'invitation prend fin
at - à   02:00 PM
on - le 2014-08-07

Time Zone
Fuseau horaire
Eastern Daylight Saving Time EDT

F.O.B. - F.A.B.

Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
LaFleche, Monique	029qf

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(819) 956-0746 ( )	(819) 956-5650

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Comments - Commentaires

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. - N°de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature   **Date**

Issuing Office - Bureau de distribution
Electronics, Simulators and Defence Systems Div.
/Division des systèmes électroniques et des systèmes de simulation et de défense
11 Laurier St. / 11, rue Laurier
8C2, Place du Portage
Gatineau
Québec
K1A 0S5

Canada

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

Request for Information -
Incident Command System's Information Management System
for the Canadian Coast Guard

TABLE OF CONTENTS

List of Appendices & Annexes

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

1. Introduction

This Request for Information (RFI) is released to advise Industry of a potential forthcoming requirement for the Canadian Coast Guard (CCG) for an Incident Command System Information Management System (ICS IMS) to be used by CCG personnel, within both the Environmental Response branch, and by other program areas in support of incident management.

2. Purpose

The purpose of this RFI is:

   a. to seek feedback from Industry regarding:

      i.   currently available IMSs that could meet the ICS IMS requirement;

      ii.   the feasibility of the requirements as detailed in the draft Statement of Requirements (SOR) attached at Annex A;

      iii. pricing information; and

      iv.   any other information that may be useful.

3. Project Background

Canada has a requirement for a robust capability to respond to incidents in the maritime domain. The complexity of modern-day incident management, coupled with the growing need for multi-agency/inter-jurisdictional involvement has highlighted the operational requirement for a single, standard incident management system that can be employed by all emergency response disciplines. To this end the CCG has decided to introduce the Incident Command System as the methodology to be used in response to all hazard incidents.

4. Project Scope

The Scope of the ICS IMS project will be as follows:

   a) Provide a commercial off-the-shelf (COTS) tool that permits the capture of all information required for incident management, and supports action planning and decision-making related to events within the context of established ICS structures and processes;

   b) Provide the software and supporting hardware solution as a national system, to be implemented in all regions and at CCG/DFO headquarters in Ottawa; and

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

c)   Provide the ability to conduct Performance Measures based on system information and data layers.

Specifically, it is envisioned that this would entail the following components:

- ICS incident management tools. This includes hardware and software at all three levels (PC, tablet & smart phone);
- Infrastructure to host the capability (either in-house or third party);
- Installation and testing;
- Initial training; and
- Training and maintenance materials.

Additional details can be found in the SOR referenced at Section 5.

5. Requirement

The draft SOR is attached at Annex A. Industry comment is invited on the requirements and concepts detailed therein.

The final ICS IMS requirements will be detailed in any future RFP.

6. Schedule

In providing responses, the following estimated Project schedule should be utilized as a baseline:

- RFI- Summer 2014

- Potential RFP Issue date – November 2014
- Potential Contract award date - Winter 2015
- Potential Initial Operational Capability – February 2016
- Potential Full Capability Delivery date – March 2016

7. Additional Information Requests

After review of all the information packages, additional information, clarifications, and/or demonstration of systems via a webinar/teleconference call may be requested by CCG via Contracting Authority identified in Section 9.

8. Enquiries

All enquiries and other communications related to this RFI shall be directed exclusively to the PWGSC Contracting Authority. All enquiries must be submitted to the

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

Contracting Authority no later than ten (10) calendar days before the RFI closing date. Enquiries received after that time may not be answered.

Care should be taken by suppliers to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the respondent do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all Suppliers. Enquiries not submitted in a form that can be distributed to all Suppliers may not be answered by Canada.

Changes to this RFI may occur and will be advertised through an RFI amendment on the Government Electronic Tendering System (PWGSC Buy and Sell).

9. PWGSC Contracting Authority

Monique LaFleche
Public Works and Government Services Canada (PWGSC)
Defence and Major Projects Sector (DMPS)
Electronics, Simulators, and Defence Systems Division (QF)
11 Laurier Street, Place du Portage, Phase III, 8C2-3
Gatineau, QC, K1A 0S5
Ph: 819-956-0746
Fax: 819-956-5650
monique.lafleche@tpsgc-pwgsc.gc.ca

10. Notes to Interested Suppliers
This is neither a call for tender nor a Request for Proposal (RFP), and no agreement or contract for the procurement of the equipment stated above will be entered into solely as a result of this RFI. This announcement does not constitute a commitment by Canada. Canada does not intend to award a contract on the basis of the notice or otherwise pay for the information solicited. Any and all expenses incurred by industry in pursing this opportunity, including the provision of information and potential visits, are at industry's sole risk and expense.

Any discussions on this subject with project staff representing CCG or PWGSC, or any other Government of Canada representative, or other personnel involved in project activities, shall not be construed as an offer to purchase or as commitment by CCG, PWGSC or Government of Canada as a whole.

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

Although the documents / information / data collected may be provided as commercial-in-confidence and will not be provided to a third party outside of Canada, Canada reserves the right to use the information to assist them in drafting performance and for budgetary purposes. ***All pricing information provided with a response that is not already publically available as a published price list will be treated as commercial-in-confidence and in no event released to any third party outside of Canada.***

Requirements are subject to change, which may be as a result of information provided in response to this RFI. Suppliers are advised that any information specifications submitted to Canada in response to this RFI may, or may not, be used by Canada in the development of the potential subsequent RFP. The issuance of this RFI does not create an obligation for Canada to issue a subsequent RFP, and does not bind Canada legally or otherwise, to enter into any agreement or to accept or reject any suggestions.

There will be no short-listing of Suppliers for the purposes of undertaking any future work, as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation to any RFP.

Respondents are requested to submit with their package:

- The name of their product including version number;
- A point of contact for additional information;
- Where possible, existing clients of the product that would be proposed;
- For all mandatory requirements in Appendix B of the SOR, an indication of those that the vendor believes their product is compliant with "out of the box" (i.e. with no additional customization required)
- A current price for the product; and
- A budgetary estimate of the cost to configure or customize the application to meet the mandatory requirements in the SOR.

Respondents to this RFI should identify any submitted information that is to be considered as either company confidential, proprietary or if the response contains controlled goods.

11. RFI Closing Date and Submission of Respondent Information Packages

Suppliers are asked to submit their ICS IMS information package to the PWGSC Contracting Authority identified in Section 9 of this RFI document, on or before the **August 7, 2014.**

- Four (4) hard copies and four (4) soft copies of the information packages are requested.

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
F7048-140035/A		029qf
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
F7048-140035	029qfF7048-140035	

Incident Command System's Information Management System

Statement of Operational Requirements

Document Control

Record of Amendments

#	Date	Description	Initials
1			
2			
3			
4			
5			

Table of Contents

1. INTRODUCTION

1.1 AIM

This document states the operational requirements for an Incident Command System Information Management System to be used by Canadian Coast Guard (CCG) personnel, for Environmental Response (ER) and other program areas in support of incident management. The core document provides high level requirements that are elaborated in Appendix B.

1.2 BACKGROUND

Canada has a requirement for a robust capability to respond to incidents in the maritime domain. The complexity of modern-day incident management, coupled with the growing need for multi-agency/inter-jurisdictional involvement has highlighted the operational requirement for a standard incident management methodology that can be employed by all incident response disciplines. To this end, CCG has decided to introduce the Incident Command System (ICS) as the methodology to be used in response to all hazard incidents. Further, as one of the main components of the ICS implementation effort, CCG will acquire an ICS based Information Management System (IM System) to support incident response.

1.3 DEFICIENCY

The Canadian Coast Guard uses a number of systems across several programs to facilitate incident management but none of these systems:

- Are fully compatible with ICS;
- Are deployable during operations;
- Are interoperable with partner systems;
- Can provide a full suite of functions including incident management, situational awareness, reporting and analysis, and resource management.

1.4 APPLICATION OF THE IM SYSTEM
COAST GUARD OPERATIONS

The IM System will support the implementation and ongoing use of ICS during incidents to which the CCG responds. ER will be a principal initial user but it is planned that ICS and the IM System will be used to support the response to all incidents to which the CCG responds as lead or in a support role. In addition to ER, other examples where ICS and the IM System could be effectively used include response to:
- humanitarian assistance;
- maritime security;
- major marine disaster;
- planned security events (such as G8/G20) and;
- CCG internal incidents.

The system will be available for use in the Regions and in the new National Situation Centre to provide staff with a high level of situational awareness with respect to ongoing incident activity, to improve briefing and decision support to senior management and facilitate information flow with other federal departments at the national level.

1.5 SCOPE

The Scope of the IM System project will be as follows:

a) Provide a commercial off-the-shelf (COTS) tool that permits the capture of all information required for incident management, and supports action planning and decision-making related to events within the context of established ICS structures and processes;

b) Provide the software and supporting hardware solution as a national system, to be implemented in all regions and at CCG/DFO Headquarters in Ottawa; and

c) Provide the ability to conduct performance measurement based on system information and data layers.

Specifically, this entails the following sub-components:

- ICS incident management tools, including hardware and software at three levels (personal computer, tablet & smart phone);
- Infrastructure to host the capability (either in-house or third party);
- Installation and testing;
- Initial training; and
- Training and maintenance materials.

1.6 PROJECT CONSTRAINTS AND ASSUMPTIONS

The constraints listed below apply to this Project:

- In order to ensure compatibility with response partners, the IM System shall be COTS, with non-proprietary document and GIS formats for ease of sharing and viewing in other systems;
- The system shall use standard ICS forms;
- Where necessary, embedded ICS forms may require slight modification. Any CCG modifications will be kept to the absolute minimum required;
- The system shall be readily accessible from the public internet and from the DFO/CCG intranet for incident management and situational awareness;
- Archives and supporting documents and the results of data analysis will be hosted within DFO IT systems;
- The system shall be flexible and sufficiently generic so as to be adaptable to any program area in CCG;
- Treasury Board and DFO IT regulations shall be adhered to;
- The system shall be UNCLAS and not higher than Protected A in order to enable the envisioned accessible cloud architecture; and
- The system shall not have any negative impact on existing CCG/DFO IT systems or software.

As well, the following assumptions will affect the IM System solution:

- DFO infrastructure will support technical and security requirements; and
- Most, if not all required performance management data would be collected as a function of operational tasks, rather than being recorded separately.

1.7 RELATED PROJECTS

Mutual awareness and alignment is logical in the case of the following projects:

- CCG's Fleet Information Management System Integration (FIMSI);
- CCG's National Situation Centre;
- United States Coast Guard's (USCG) Portable Handset Integrated Next-Generation Incident Command System (PHINICS) Project[1];
- Emergency Response National Assets Management Transition Plan;
- National Defence's Search and Rescue Mission Management System;
- CCG MCTS Modernization Project (specifically MCTS Logging System);
- Multi-Agency Situational Awareness System (MASAS);
- Operations Centre Information Portal (OCIP);
- Interdepartmental Maritime Integrated Command, Control and Communications System (IMIC3);
- Environment Canada's Environmental Emergencies Mapping System (EEMAP).

2. SYSTEM OPERATION

2.1 MISSION

After an analysis of current incident management doctrine and consultation with key partners including the United States Coast Guard, CCG has decided to introduce the Incident Command System, which will increase CCG's capability to respond to large, complex ER incidents. As previously mentioned, ICS is the logical methodology for the delivery of a coordinated response to not only environmental response, but to other incidents across the mandate of the Coast Guard. The IM System will be the technological platform to support ICS throughout CCG. It promotes the efficient coordination and application of expertise and resources from multiple agencies and levels of government reducing the requirement for duplication of resource capacity and effort.

As it relates to CCG incident response, the IM System will support CCG program incident management from the time an incident is reported to the final closure of the incident. It will also support performance measurement information requirements and will enhance situational awareness by the responders and decision makers within the Department.

---

[1] An initiative to examine how mobile devices can enhance existing ICS workflows

2.2 ENVIRONMENT

The IM System is envisaged for primary use by CCG users in the field, within an incident command post (ICP) and at regional and national offices.

The primary infrastructure and equipment operating environment will be co-located with other IT equipment in server rooms and offices. Ancillary equipment such as smart phones and tablets, will be located in the field. Provision of COTS ancillary equipment is within scope, however specifications for them are not considered necessary.

In these environments, CCG personnel and partner operators will work collaboratively to gather and share information, significantly enhancing the ability to develop collective situational awareness, as well as to collaboratively plan and execute responses to incidents.

2.3 CONCEPT OF OPERATIONS (CONOPS)

Existing as a separate document, the IM System CONOPS will outline how the system will be used from the initial reporting of an incident to its final closure, to capture and disseminate information and support the planning and execution of incident management functions, while providing information to decision makers. The system will be accessible anywhere that information technology or cellular telephone infrastructure is available, or through remote connectivity via such means as satellite or land mobile radio. The CONOP will further describe how the ICS based system will assist users in planning and executing operations using the ICS structures and workflows at a level appropriate to the scale and complexity of the incident. It will be used for small scale incident investigation and response operations and be scalable to be able to deal with major complex incidents.

2.4 CONCEPT OF SUPPORT

The IM System, as a commercially-based solution, will be maintainable through IT support arrangements similar to those employed for existing commercial information technology systems. As the IM System will support critical incident response there is a higher availability requirement and a shorter acceptable outage period than for administrative networks. As such, any internal hosting requirements will be accommodated on the CCG Operations Network (CCG OPNet). The system will be maintained according to current CCG/DFO IT Support models, as follows:

- Help Desk[2], Tier 1 and Tier 2 maintenance for IM System application software and dedicated infrastructure would be provided by existing or augmented CCG/DFO IT support personnel. It is understood that this will include a dedicated national system administrator;
- The vendor would provide routine patches and updates for the ICS IM System Application Software under the applicable licensing agreements;
- The Licensing agreement with the vendor would include Tier 3 support for the ICS IM System Application Software, such as configuration assistance for complex modifications and training material updates on delivery of major application releases/updates;

---

[2] *Some COTS solution will by nature offer online or other Help functionality as part of the package. CCG may choose to have the internal Help Desk in Quebec City handle issues such as outages and hardware issues, whereas the user could be referred to online or vendor Help lines for "how do I do this..." questions.*

- As noted in the technical requirements, the hardware associated with the IM System will not be unique to the system, and will therefore be maintainable as general IT assets. Vendor support from the application software provider should not therefore be required for this aspect of the capability;
- Field equipment such as smart phones and tablets will be maintained and life-cycled in the regions in accordance with existing office IT material acquisition processes; and
- A cadre of CCG support personnel will be trained to a sufficient level of understanding for routine maintenance, which includes basic user assistance, patch and version updates and basic configuration.

As a commercial product, the solution may prove to have its own cost-effective maintenance, help desk or other arrangements. If these are consistent with other constraints, they may be favourable options for support. Larger configuration issues would be referred to the vendor, according to support, license, maintenance or other arrangements that may be negotiated as part of the implementation process.

3   PERSONNEL ROLE/TASKS

3.1   OPERATORS

The IM System will be deployed to provide availability from any CCG/DFO facility or platform. At these locations, the IM System will be an enabling tool for CCG staff for the management of incidents from the initial report to final incident closure. The system could be employed for these purposes on a 24/7 basis, or other duty cycles being employed by these operators. It will support ICS processes and workflow.

As well, the system will be employed by staff in the field to provide support for initial assessments, enhance situational awareness and support response planning and task coordination.

The IM System will also be employed in both CCG regional and national headquarters and other locations where there is a need to monitor and support the incident response or use the available products and information for briefings and presentations.

3.2   SUPPORT STAFF

The IM System will be primarily supported by first-line CCG IT support personnel who currently support other CCG operational IT infrastructure. A national system administrator will enhance the Tier 1 support capability.

As outlined in the Concept of Support, Tier 3 support may be conducted by vendor staff.

3.3   USER CHARACTERISTICS

The IM System will be used by a wide range of CCG personnel with varying degrees of familiarity with IT systems and software, therefore, the system must be intuitive and user friendly.

Many users will typically possess skills related to the use of current/existing CCG/DFO information systems and will be familiar with basic office automation suites and related systems.

Notwithstanding the paragraphs above, new or external users may have less experience/skill in these areas. Therefore, the training concept provides for qualification of on-site resources to rapidly train new personnel.

4 SYSTEM CONCEPT

4.1 Single Portal with Layers

Although it may not be possible to achieve the full range of required functionality in a single software package, the IM system shall present a single portal to the user. This portal shall support the ICS processes as well as provide/integrate the tools necessary for the performance of operational tasks. It shall have a geographic information systems (GIS) interface that is comprised of various layers overlaid on a selected chart/map. In today's incident management environment, situational awareness is significantly enhanced through GIS that enables a visual analysis of events and facts through pictures, video and data related to geography.

Additional system requirements:

- Users shall be able to select, edit, filter or add new layers or details to layers as required enhancing situational awareness.
- The system should be capable of importing or exporting data to build additional layers.
- It shall have basic GIS mark-up tools, relying on external applications to provide more complex layers (e.g. the ability to easily import data from Environment Canada's Environmental Emergencies Mapping System).
- The IM System shall, to the maximum extent possible, be interoperable with the Common Operating Picture within the CCG Fleet Information Management System Integration (FIMSI).
- Material resource ICS typing and costs will be captured in a resource database ensuring consistency with ICS recognized best practices.
- A performance –based qualification system (PQS) will be adopted for personnel and captured in a resource database. ICS and CCG training qualifications and ICS experience will reside there.

The IM System application is intended not only to improve situational awareness, but must reduce the workload of field and ICP staff. One key concept shall be that, as much as possible, data is entered once and re-used by the system as required by any other ICS form. For example, at many junctures in the ICS planning process and in various forms, certain data elements can easily be re-used to avoid re-entering the same data multiple times. As another example, the action of planning logistics requirements in support of the development of the Incident Action Plan (IAP) would generate the appropriate logistics requisition forms.

4.2 Cloud Concept[3]

One of the reasons for the transition of operations to ICS is to enable a seamless scaling up for response to a major oil spill. This would entail the rapid influx of significant numbers of personnel external to CCG and DFO. During a major spill it is anticipated that CCG ER personnel could soon become a minority within field and ICP groups. In order to provide the required access from the field and to external

---

[3] Meaning in this case real time networked capability using the internet and cellular telephone infrastructure.

agencies, a "cloud concept" is envisioned for the IM System.

The primary characteristic that drives the "Cloud" architecture as it relates to the IM System is that a user will access the application from any workstation or mobile device without having to install localized software (with the exception of limited mobile "offline" capability). The IM System application is installed on a selected network(s) (COTS or CCG Op Net) where all of the data storage, user information/permissions, and software processing will be conducted. Users will then access the hosted application over an internet/network connection using a secure url that can be opened within any standard internet browser or mobile device. The replication of the IM System application over a minimum of two physical locations (e.g. Quebec and Victoria) ensures that if one installation goes down, the "cloud" will still be available to all users. Downloadable mobile applications will provide core functionality on mobile devices in the event of losing internet connectivity when in remote locations. An automatic information sync would complete the information sharing process once the mobile device re-connects to the internet.
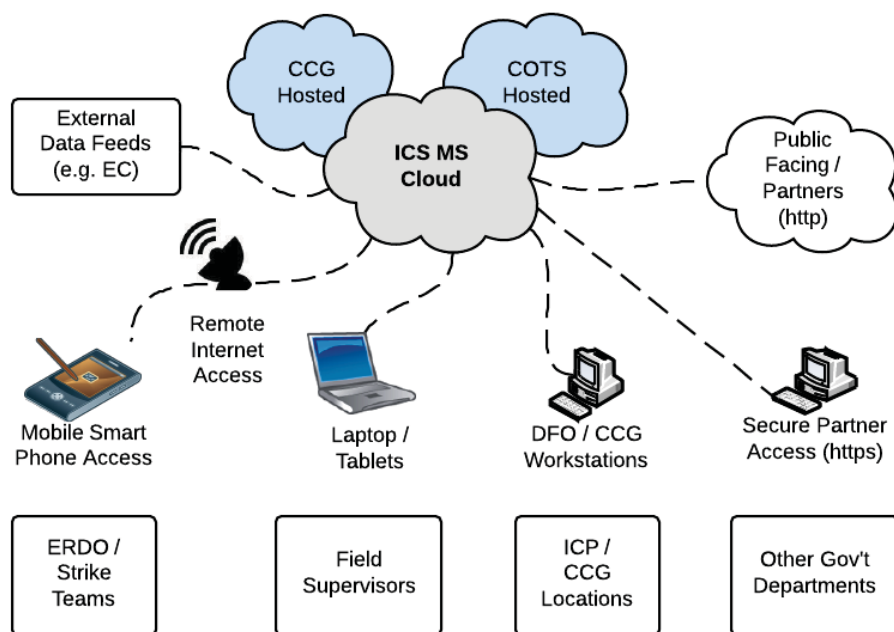

Figure 1. Cloud Concept

4.3   Scalability and Interoperability

A good example of the use of the system's requirement to be scalable and interoperable is a response to a major pollution incident. During such an incident, ER's National Response Team would be deployed for a major spill, but would likely number from 40 to 60 people at most. Therefore, a major spill would require a significant influx of personnel from other CCG branches and possibly a host of other departments and agencies to assist in managing the incident, likely over a protracted period of time and necessitating relief personnel. If these people have any incident management training, it will likely be ICS. Based upon the joint CCG/USCG CANUSLANT exercise experience, the number of system users for a large pollution incident could be as high as 800.

The system will need the flexibility for this intake of external personnel, so that resources can be rapidly recorded in the IM system and appropriate levels of access to the system can be provided by a system administrator in a field office or at the ICP. A useful paradigm is the massive Deep Water Horizon response operation.

Conversely, the system must also be scalable in a simplified manner to ensure that it can be readily used for the vast majority of incidents faced by CCG. By using standardized ICS incident types, the system should be able to provide initial structures and workflows tailored to the magnitude or complexity of the operation, which can be modified or scaled up or down as required by the situation. As an example, the operational planning cycle needs to be flexible to ensure that it is always thorough and methodical, yet makes sense in the context of the incident being dealt with. The user interface should be workflow focused, and not simply an ICS form document management system.

4.4 Resource Tracking and Forecasting

The encumbrance of resource and cost tracking should be eased by the system by automating data collection and ensuring this data is seamlessly available for reuse where appropriate in different forms or reports within the system.

Conceptually equipment or personnel resources will be recorded for the incident using an interface based upon the ICS 211 forms (ICS211E – Check-In List, Equipment / ICS211P- Check-In List, Personnel) that will link to pre-existing databases to provide costing information. For example, if the resource is an employee of the Government of Canada (GOC), their job classification, level and incentive would be captured as they are mobilized. With that information the system would provide reasonably accurate costing information by accessing a database that contains GOC pay information. This source need not be continually updated; if done periodically it will provide acceptable cost tracking and forecasting. In addition, the use of personal swipe cards to track on/off duty times and location of personnel will be important.

Likewise, all equipment resources in an ICS environment are numbered, and so a database can be linked to the IM System to provide the "per use" or "daily cost" of that resource. For example, by capturing the designated number of a specific skimmer's bar code when it is mobilized the cost of its use can be tracked, as well as its projected usage based upon the Incident Action Plan.

Linking to the tools existing in the government financial reporting systems is more challenging. What is envisioned is that cost tracking reports (e.g. from government credit cards) can be imported to the IM System in order to help track expenses related to an incident.

4.5 HR Training/Qualification Tracking

The IM System should support ongoing ICS training. On-line ICS-100 courses could be offered through the system so as to track individual ICS qualifications. It will also be necessary to update the records in the system with ICS courses offered elsewhere. The purpose of this is to enable the system to assist planners with populating incident organization charts. Conceptually the system shall produce a pre-planned organization chart based upon the level of the incident selected. A planner could then populate the chart with CCG personnel, and the system would confirm the resource has the qualifications required for that position based upon the resident qualification database. For more significant incidents it will require certain experience for key positions as well. As such, the system should record resources assignments on each incident in the personnel profiles.

4.6 Mobile Requirement

The nature of Coast Guard operations and in particular ER incident response, dictates that most tasks are undertaken in the field. From the initial assessment by the ER Duty Officer, to spill containment and full up shoreline and water clean-up operations, the location of activity is, by definition, not office/command post based. As such, an important requirement will be for the IM System to provide operationally deployed staff with electronic tools that enable the gathering and passing of assessment information from the field, as well as the management of tasks and resources during operations.

Providing such tools will significantly enhance situational awareness within CCG by facilitating more timely and complete reports and updates from the field, and the passing of direction/tasks from a command post to the field. With the proliferation of personal mobile devices, accurate coordinates, photos, video and notes of an incident can be rapidly compiled into a report for alerting and updating those persons that rely on timely information for decision making. The intent is to leverage common tools, such as smartphones and tablets, without creating cumbersome applications or user presentations. The result must be to make the process of information gathering and dissemination much less cumbersome than current processes. As much of the field operations are conducted in locations off the cellular communications grid, the mobile capability should allow independent operation until connectivity is synched and/or restored.

4.7 Pre-Planned Responses

In accordance with traditional operational readiness procedures, the IM System shall be capable of storing and presenting pre-planned operational responses and contingency plans. It should also support the modification and development of such plans through the observations and lessons identified during exercises and operations.

4.8 Performance Measurement

A significant portion of the required statistics related to CCG incident response activities should be gathered in the background, as a by-product of using the IM System to support routine response operations. Data requirements should be based upon internal performance measurement requirements and the necessity of supporting future risk analysis work particularly regarding marine pollution. Once these requirements are set, the system should assist CCG in improving data consistency and completeness through the use of such tools as mandatory fields, business rules and data quality assurance. To this end, the system's database must lend itself to analysis using standard database query tools, such as Cognos®. During system testing, confirmation will be made that performance measurement data requirements can be adequately met through the use of the system to support operations.

4.9 Geared towards CCG and ICS Workflows

Although it shall be an existing COTS ICS incident management system, the CCG business rules that trace the flow of work from initial incident notification to full response and recovery shall be taken into account. This will ensure that the product is optimized for the CCG environment and user base while retaining its standardized ICS nature.

A significant percentage of CCG response efforts will not require a response that requires engaging ICS processes beyond an ICS Form 201 (Incident Briefing). As such, the Form 201 shall be optimized not only to capture essential data, but to be as user friendly as possible. A dedicated Appendix C captures these requirements from an ER, oil spill perspective.

5. TRAINING

5.1 OPERATOR TRAINING

Training support for the IM System would begin with vendor-supplied initial training, which would subsequently be internalized within the CCG training structure through a train-the-trainer program.

The IM System, as a relatively straightforward commercial capability, should lend itself to a common curriculum training approach for all users. However, in preparing the training material for the IM System, the vendor will be provided access to regional requirements that might need to be incorporated. An operational authority shall approve all training deliverables from the vendor.

Initial training would take place early enough that wider training could also occur prior to or as part of the implementation phase, to ensure the most effective use of the capability upon implementation. Once implementation is complete, the internal training would prioritize new users, regular refresher training (if consistent with CCG training approaches) and, if required, vendor-provided updates if major changes occur in subsequent releases.

It is anticipated that training will take place at the location where users normally work.

As a precursor to training, a Training Needs Analysis shall be conducted in order to better determine the course content for training packages. The Training Needs Analysis should consider the following elements:

General Users

- Level of User GIS Familiarity
- Level of General IT Familiarity
- ICS training and experience
- GIS Layer Query and Input Concepts
- Display and Annotation Concepts

System Administrators/Higher Level Users (Power Users)

- Analysis, Performance Measurement and Business Rule Concepts
- Existing User Tasks, Workflows and Information Products
- GIS Layer Output and Exchange Functions
- User Troubleshooting
- Form and workflow customization
- New user registry and account management

5.2 MAINTENANCE STAFF TRAINING

In accordance with the maintenance concept above, the first and second tier support will be absorbed by existing or augmented DFO IT maintenance staff. The vendor will provide on-site training at the 2 CCG OPNet locations for support staff as well as for the national support staff in Ottawa. The training will consist of general familiarization and routine maintenance and, in some cases, in-depth system administration / configuration training.

6. IM SYSTEM REQUIREMENTS

6.1 GENERAL CONSIDERATIONS

The complete list of requirements for the IM System is found in the Table at Appendix B.

In addition to the specific requirements, there are considerations that are required, as described in the following paragraphs:

6.1.1. Commercial-Off-The-Shelf (COTS). The system shall be COTS. COTS is defined as a system that already meets all of the mandatory requirements and is currently in use by at least two emergency management organizations.

6.1.2. Connectivity to other Partners. It will be crucial to ensure that the IM System has the ability to import/export data sets in useable formats as it pertains to the layered concept associated with the GIS component.

6.1.3. Capitalize on Available Information Layers. The system shall be based on open, non-proprietary data standards. As a minimum, this will ensure simple data exchange with Environment Canada, United States Coast Guard and partner GIS layers, as well as the flexibility to adapt new formats and products in the future.

6.1.4. Bilingual. The system shall offer the user interface and allow free text entry in either official language.

6.1.5. The CCG Fleet Information Management System Integration will be an integral component of ICS but will remain a separate application.

7. SCHEDULE

The following milestones are targeted for this system:

Finalization of Requirements – October 2014

Request for Proposals – November 2014

Contract Award- March 2015

Customization Begins- March 2015

Implementation- December 2015

IMS Training Begins- December 2015

Initial Operational Capability – February 2016

Final Operational Capability – March 2016

APPENDIX A – GLOSSARY OF TERMS

AMS   Asset Management System

CCG   Canadian Coast Guard

CONOP   Concept of Operations

COTS   Commercial-off-the-shelf

DFO   Department of Fisheries and Oceans

EEMAP   Environmental Emergencies Mapping System (EC)

ER   Environmental Response (CCG ER)

FIMSI   Fleet Information Management System integration

ICS   Incident Command System

IMIC3   Interdepartmental Maritime Integrated Command, Control & Comms. System

IMS   Information Management System

ICP   Incident Command Post

MPIRS   Marine Pollution Incident Reporting System

NIMS   National Incident Command System (United States)

NSC   National Situation Centre

PQS   Personnel Qualification System

RO   Response Organization

SOW   Statement of Work

SA   Situational Awareness

TA   Technical Authority

TSOR   Technical Statement of Requirements

USCG   United States Coast Guard

Intentionally Left Blank

APPENDIX B – TABLE OF REQUIREMENTS – IM SYSTEM REQUIREMENTS

#	REQUIREMENT	COMMENT	M/D#
	Legend **M - Mandatory** **Zero – Not rated** **Two – Nice to have** **Three – Important** **Four – Very Important**		
	Incident Action Plan/Case Management		
	System based on ICS Organizational Structures and operational processes, including forms		M
	Scalable Incident Organization chart reflective of selected ICS incident type	Org chart default should be auto structured to incident level 1-5	M
	Subsequent selection of a different incident type (1-5) would scale up or down associated forms and pre-planned strategies and tactics		
	System assists in populating Org Chart by suggested pre-requisite training or experience	See training requirements also	
	System assists in populating Org Chart by matching position's suggested pre-requisite training or experience with personnel data		
	Through the selection of incident type (1-5), system presents appropriate ICS forms that have pick lists of pre-planned strategies and tactics		M

Requirement	Priority	Notes
Dropdown, editable (by designated user) lists for objectives and assignments	M	
Workflows and/or timelines that follow and guide staff through the ICS Planning cycle. Support to ICS meeting planning and execution: e.g. what forms are required, meeting attendance, sample agenda, sample objectives or tactics through pick lists type tools.		Wizard or incident report template to capture key data which populates relevant sections of any ICS form, pick list/drop down options changes on complexity/type of incident. Workflow, not only form focussed such that an operator with ICS 100 training can work through the planning/operational workflows. ICS forms still essential and need to be able to work directly in a form if desired.
Enable modified workflow and planning cycle based upon incident type	M	
Recognize user as a position within ICS, but tracks what person is filling that role at a given time	M	
Allows modification to steps and timelines of "P" or Operational Planning Cycle	M	
Real-time resource tracking/availability status for planning	M	Available/Deployed/Re-deploying using ICS resource codes. ICS form captures cost for expenditure tracking to end of current operational period and forecasting for next operational period e.g. based upon ICS form 215 (Operational Planning Worksheet).
GIS Resource Tracking		Track resources with AIS/GPS. System to be capable of integrating output from a 3rd party asset tracking application that uses common data standard
Ability to update resource database through importation of standard data format or manual input		
Capture human and materiel resources on ICS 211E/P (Check-in List Equipment / Personnel) and update resource database.		ICS 211P needs to have field for gov't of Canada personnel with a. category b. level c. incentive. for non gov't of Canada personnel field requires hourly or daily rate and overtime cost. Note this will require amending 211 (Resource Request form). CCG will need to do materiel resource typing, ideally by using and modifying USCG resource codes. This process will enable personnel and materiel resource tracking and forecasting.

Requirement	Example / Notes	
Tracking human and materiel resources. Software enables logging resources in/out to track total active time using bar code scanners and card readers		
Import and display CSV files for cost tracking purposes	E.g. Download tracking reports from MRS to track gov't acquisition card purchases to display as part of financial tracking in the ICS MS	M
Uses data inputs across all ICS forms - enter data once to be reused as appropriate in other forms sharing common field.	E.g. ICS 201 info automatically populates other forms as incident ramps up and IAP is developed. ICS 211 also has multiple connections to other forms. e.g. Auto generates logistics 213 from plan/pre-plan Pushing form data into ICS MS resource database tables, assignments tables, etc will allow the system to pull the information back out to auto-populate forms and dashboards.	
ICS Forms auto populated from selected contingency plan/geographic response plan/strategy		
All required functionality within a single portal or application. Portal that presents information from diverse sources in a unified way. E.g. a single underlying map/chart with layers	Single portal may include links to external sites or 3rd party applications as described by requirements in this matrix	
Ability to send/receive non ICS reports from template screen. Report fields generated/populated automatically to/from system to generate or update an incident.	E.g. MCTS/RMIC sending an alert/incident report or National reporting system from an ICS 201. Data fields would require mapping form one form to another Ideally situation reports published for downloading as required	
Mission specific templates presented e.g. once incident identified as marine pollution or threat of pollution, the system presents the user with pages with appropriate presentation and pull down menus on ICS forms related to marine pollution	Common OS (oil spill) ICS forms would be useful starting point. ICS 201 to be amended as per Appendix C	M
Ability to generate ICS 232 (Resources at Risk Summary e.g. ICS 232-CG) data fields from EC database	Note this is dependent on establishing data standards that will enable this to be done. The requirement is for the system to be capable of this with the assumption that the data is in the appropriate standard/format	

Requirement	Notes	Priority
Able to add links that point information outside of the ICS IMS. Websites and documents	Enable access to directives, plans, procedures, standards, policies etc. related specifically to Incident Management, i.e. include: National Contingency Pan, Regional Annexes, existing OGD/Agency MOU/MOA/SLA's that CCG has in regards to ER.	M
Ability to collaborate via the web/cloud on maps/reports in near real time (i.e. not simultaneous). Basic functionality, such as marking up map with points, line & text box		
Unique ID numbering on incidents		
Ability to capture Lesson Observed during operations with quick link access from any screen to the CCG form	Requires data structure to be developed with vendor	
When documenting a pollutant source, capability to access vessel tombstone and ideally voyage data to be documented through a link to external source.	Tombstone data shall be captured as snapshots, as data may change during an incident. Suggest using INNAV, Lloyds or the Navy's Global Positional Warehouse (GPW) for all vessel data, which includes INNAV and approximately 14 other data feeds such as Exact Earth. Pushed out via CANMARNET to federal departments already	
Provide Point-to-point and group chat capability	Can be 3rd party application	
User alerts for significant event	Requires CCG definition of what alerts they need	
ICS forms carry over to next operational period		M
Ability to use archived ICS 204s (Assignment List) and logistics information to help generate or update contingency plans	Contingency Plan: pre-plan for type of event or specific geo location	
Standardized table of ICS 204 assignments that can be used when developing contingency plans or an IAP	Contingency Plan: pre-plan for type of event or specific geo location	
In the execution of a contingency plan, updating fields such as contacts and logistic details will update the contingency plan, with required confirmation to change contingency plan	I.e. Ability to change aspects of the plan and choose to have them saved as the baseline contingency plan	
Criteria-based Help function to guide in selection of incident level	CCG-supplied criteria	

Requirement	M	Comments
In addition to standard all-hazard forms, ICS forms customized for marine pollution response (e.g. ICS 209 [Incident Status Summary]) if incident selected is marine pollution	M	
Insert attachments (audio, fax, emails, videos) to forms, logs or reports		
Administrative Functions		
ICP watch management/planning, with automatic recording of who amends the shift plan		
Editable contact book		
Create distribution lists from contacts		
The ability to assign new access and permission level directly from an established list of contacts in Outlook		
Statistical Functions		
Ability to export data for standard data analysis, such as CSV	M	
Ability to execute ad hoc data queries against the database using analytical tools e.g. Cognos8	M	Use standard report generation tools to do Analytical functions.
Support consistent data collection on designated data elements through such tools as mandatory fields and drop down menus	M	See Appendix C for known requirements relating to ICS 201
GIS Capabilities		
Add map/weather/tide & current/met/water level/vessel data (tombstone & voyage) "Snap Shots" (data at a given time) to forms	M	Historical record of conditions at specific times. E.g. ICS 201 (Incident Briefing) section 4 could include snapshot of selected area from GIS
Pre-selected downloaded/cached forms and map/chart layers enabling an "off line" capability to work offline for a specific area for off-grid field situations	M	
Ability to show/hide layer concept	M	
Plot an incident position on an electronic chart by clicking on the chart and entering details or by entering lat/long		
Ability to draw polygon on map/chart		
Insert standard ICS symbols		

Calculate perimeter & area of selected polygon	
Name polygon, save as sector/AOR/division	
Ability to place assets/resource allocation on map	
Point to point range and bearing	
Geo location of assets	
Geo location of an input such as a picture	E.g. picture of beach tar
Able to add at a minimum the follow annotations: arrows, lines, text, and graphics/photos	
Segregation between plan and actual assignments on GIS	
Ability to activate a planned GIS assignment object to near real time GIS presentation (e.g. boom planned/boom deployed)	
ICS forms that have visually displayed data on the GIS interface shall also be accessible from clicking within that GIS visualization	E.g. Select object and amend 204 associated with it
Users shall be able to initiate the creation of ICS form/processes from within the GIS interface	For planning support e.g. Draw a boom and begin populating a 204
View object data associated with GIS object from GIS view	
User Interface	
Electronic incident Dash Board. The primary interface screen shall have an overview of all active incidents with summary information or a specific incident as designated by user preference	Configurable dashboard providing a situation overview with GIS component combined with key portions of ICS 209 (Incident Status Summary), high priority ICS 233 (Open Action Tracker) entries and urgent 214 (Unit Log)
Dash board has chronological tracking of issues/inputs as combination of consolidated ICS 214 (Unit Log) section 8 high priority inputs and ICS 233 (Open Action Tracker) (items base on selected display priority for both) that can be edited. Overall mission status (resources, progress…). Support to decision-making. Urgent mission messages	Editing consolidated view would be permission-based. This would required prioritization for unit log entries that would populate a common list. ICS status board of progress exists already - what is the number
Configurable Incident Status Board	
Prioritization system for ICS 233 entries with display sorted by priority	Enables auto exporting of high priority entry to the dash board, but controls who can designate high urgency

Requirement		Comment
Urgency designation for ICS 214 entries. Requires access control through user profile		Enables auto exporting of urgent entry (e.g. Discovery of dead whale) to the dash board, but controls who can designate high urgency
Ability to generate ICS 233 by section and link high priority items to incident dash board	M	
Ability to sort/filter incident ICS 233s by column		
ICS 201(Incident Briefing) contains Appendix C requirements/functionality		
ICS 201 optimized for tablet with touch screen interface for functions such as selection of drop down items and drag and drop-type capability to insert GIS snapshot or pictures	M	
Geographical database search of geo-referenced points by name		
Bilingual user interface	M	
Ability to minimize non-operational window space e.g. Remove banner		
Combine reports into single pdf file		
User can have multiple roles in single or multiple incidents		
Ability for user to confirm and edit log-in information		
User information can be displayed for a form and data field		e.g. Mouse over a tab/button/section creates pop-up help information
Operator alert triggered by scheduling a "Planning P" meeting		
Keyword search		
Training		
On-line system training		
On-line ICS 100 training course in system		
System can track CCG training qualifications (e.g. ICS and ER)		Enables allocation of personnel to ICS org chart based upon training and experience
System can track personnel incident ICS staff assignments by position		Enables allocation of personnel to ICS org chart based upon training and experience
Exercise mode for training		Non-archived unless desired - notifications not sent

System & Security	What systems must ICS MS interface to - e.g. Financial Management?	
	%TBD	M
System availability equivalent to CCG OpNet		
Ongoing data storage. Back-up from public hosted site to internal site.	If 3rd party hosted	M
Backups shall be executed at a minimum every 24 hours, and stored as per Treasury Board's current policy on Records Keeping.		M
For interoperability, all information and data structures shall conform to common format types (i.e. WMS, WFS and web services XML, JSON, KML) that will easily allow for the import and export of information to/from external systems.	Provides access to: e.g. topography, CHS chart, weather, ice, tide/current, etc.	M
The system shall be "cloud" based, in that, it shall be accessible from any internet enabled computer, tablet, and smart phone.		
Access password protected		M
Access password protected - to incident and specific access level within incidents		
Downloadable application for smart phone/tablet's allowing for offline functionality of the system. All offline work shall be instantly synced with the system once an internet connection has been re-established.		
Speech to text capability for smart phone		
Template forms to have pre-filled data elements that are static and dynamic auto fill data elements from any form with same data field	Based upon stored pre-plans	
Readily customizable forms by system administrator or designated user	e.g. Form 201 Incident Brief with drop down options that support CCG Incident Notification requirements	
The system shall manage all user accounts and permissions free from interference from the hosting network.		
Multi-media upload/download capability		
System user capacity up to 800 personnel	Normally there will be less than 100 users at any given time	
Meets IM MITTS requirements (MITS = Management of Information Technology Security)		M
System must not require change to existing CCG/DFO software systems, with the sole exception of query or similar connection/mechanism required to enable data/information exchange		M

Responsive Functionality: Tablet		M
Tablet capability. User interface is responsive (Responsive Web Design).		M
Specific functionality, different from the standard system functionalities, that best meet the capabilities of a standard Tablet.		
Focus on the consumption of information, assignment receipt, and action updates		
Able to create and update ICS forms (e.g. 201, 204, 211, 214, and 233) with use of pre-populated drop-down input selections where possible.		
Touch-screen interface allowing users to draw polygons, insert ICS symbols, labels, points, and lines within the GIS.		
Able to insert multi-media (photo's, video, audio) directly into forms or as attachments		
Able to insert GIS snap shots directly into forms or as attachments		
Downloadable mobile capability that allows for offline functionality on a tablet		
The tablet interface shall allow for video streaming (e.g. used as a web cam share between the field operators/supervisors and the ICP)		
Responsive Functionality: Smart Phone		
Smart phone capable with specific functionality, different from the standard system functionalities, that best meet the capabilities of a smart phone. Prioritized user interface is responsive (Responsive Web Design) Similar requirements to tablet, optimized for smart phone viewing and interface.	211 e.g. Who is in a boat resource	
Functionality shall focus on the consumption of information, assignment receipt, and action updates (incident assessments/ICS 204)		
The ability to create and update relevant aspects of ICS 201, 204, 211, 214, and 233 forms (at a minimum)		

	Touch-screen interface allowing users to draw basic polygons, insert ICS symbols, labels, points, and lines within the GIS.
	Able to insert multi-media (photo's, video, audio) directly into forms or as attachments
	Able to insert GIS snap shots directly into forms or as attachments
	Downloadable mobile capability that allows for offline functionality on a smartphone
	Utilize phone's built in voice-text capability for the population of large text fields.

APPENDIX C – ICS 201 INCIDENT BRIEFING FORM REQUIREMENTS

#	DATA ELEMENT	COMMENT/FORM OPTIONS	ICS 201 Placement
1	Date/time	Option to accept current date/time	Section 3
2	Map/Sketch	Browse and insert and drag and drop capability	Section 4
3	Cause*	Dropdown Menu (re-use existing fields in MPIRS)	Section 5
4	Incident Location Description*	Free text field of commonly known name of location	Section 4 or 5
5	Incident Lat/Long*	Auto capture from GIS incident location	Section 4
6	Area*	Auto capture based upon incident lat/long. Based on existing list of areas	Not required on form
7	Sub Area*	Auto capture based upon incident lat/long. Based on existing list of sub areas	Not required on form
8	Incident Type*	Dropdown Discharge/ Threat of Discharge (shipboard spill only)	Section 5
9	Source*	Dropdown with following options: a. Vessel – Tombstone data enter IMO#, name or MMSI and Auto fills remainder of available tombstone data b. Land Based – OHF Name/other c. Mystery d. Other	Section 5
10	Vessel Tombstone Data*	Enter IMO# or MMSI# or Name, system then populates, type, flag state, call sign, dimensions, etc using available sources such as INNAV, Lloyds, or Global Position Warehouse on CANMARNET	Section 5
11	Oil Handling Facility Name*	Free text	Section 5

12	CCG Role	Dropdown: IC/FMO/Resource	Section 7
13			
14			
15	Prepared by	Auto-fill based on user log on information	Section 8
16	Objectives/Actions/Plans	3 Dropdown lists	Sections 7 & 8
17	Organization	Structure based upon selected incident level	Section 9

Notes:

1. This is an *example* of how the ICS IMS could simplify data gathering while capturing data necessary for performance measurement. It is not intended to prescribe the precise solution.

2. * Performance Measurement data. The elements captured in this matrix are a subset of the total data requirements to support performance measurement. The elements not included here are already contained in other ICS forms.

3. MPIRS. Marine Pollution Reporting System

4. Section #S based on FEMA ICS 201 Form