Request for Contractor Support for ACCSP Software Development

The Atlantic Coastal Cooperative Statistics Program (ACCSP/Program) is looking for contractor support to develop software for a number of platforms that will collect trip data, using a harvester swipe card, for shellfish transactions between seafood dealers and harvesters, and then submit these data into the Standard Atlantic Fisheries Information System (SAFIS).

**Background:**

Initially deployed in 2004, the SAFIS system has become a critical component of fisheries data reporting. Originally written in Oracle Forms, the system has undergone numerous revisions over its life to accommodate changes in technology, the needs of the ACCSP Program Partners and the requests of the end-users.

There have always been issues with gaining acceptance of electronic reporting by both Partner agencies and fisheries constituents. Expanding and enhancing the reporting options will help improve acceptance and reduce resistance amongst those required to report.

Hand held devices such as smart phones and tablet computers have been gaining in both popularity and capability in recent years offering immediate access to internet resources that previously required a computer and hard wired connection. End users have become much more comfortable using these devices and applications are available for everything from banking to Movie Theater ticket purchases. These devices offer great flexibility in reporting, ease of use for the end users, and a greatly simplified user interface. ACCSP is currently working with a contractor to develop a hand held application to allow harvesters to report trip level data from their mobile devices.

Dealers on the Atlantic Coast have been reporting trip level landings since 2004, using one of several reporting tools to provide these data to the Program. One of the biggest issues with the dealer reporting process has been properly identifying the harvester and vessel associated with each transaction during the reporting process. Often transactions are submitted with “unknown” or incorrect identifiers. Furthermore, dealer transactions are often not submitted until a week after they actually occur, which is perfectly legal, but just makes time sensitive decision making, such as monitoring quota-based fisheries or addressing shellfish related public health issues difficult.

The Massachusetts Division of Marine Fisheries (MADMF) and the Maine Department of Marine Resources wish to build a dealer reporting application, which would run on a multitude of platforms (mobile, tablet and desktop), that would use a swipe card already provided by each agency to harvesters with an encoded magnetic strip, bearing information that will identify the commercial fishing permit and or the associated vessel. The harvester will present that card to the dealer as a way to consummate the electronic transaction between harvester and dealer. The application will read the card, via a magnetic swipe, which will then populate the transaction identifying the permit holder and or vessel of the harvester. Depending on the partner, the dealer may complete the other portions of the transaction, including both the dealer as well as the harvester catch and effort information, and submit it to SAFIS at that time, assuming the device has access to the internet. The intention is to build on the Application Programming Interface (API) which utilizes a web service already developed for vessel trip reporting, that was funded separately through a different ACCSP project, to accommodate transactions sent by this application. The API must be able to accept data from an intermediate server that is needed for the card management program to be created and other add-ons that SAFIS cannot currently accept. The intermediate server must be able to feed data to SAFIS in near real time.

Initially, the intention is to pilot the Massachusetts version of this application in at up to ten non-federally permitted shellfish dealers in the first year, as transactions by these dealers are relatively straight-forward, and require the submission of an area fished in Massachusetts. If the pilot is a success, MADMF intends on pushing the technology out to other shellfish dealers in the state, and possibly to other dealers buying other product in future years. Not only will this help to address accountability and timeliness of data submitted by dealers, but it may also set the stage for electronic tracking through the seafood distribution chain to help mitigate seafood traceability issues.

The Maine version of the tool will utilize the same basic system as the Massachusetts version, but will have some variation in data elements collected based on regional differences. In addition, the Maine version will require the ability to interact with a card management system in order to validate the swipe cards. The program should allow ME the ability to access a dealers system remotely and determine in which fisheries the dealer is allowed to participate.

**Approach:**

A standard API has been written that allows for submission of data securely across the internet using web services and the Java Script Object Notation (JSON) data interchange format for dealer reporting. The API establishes a standardized mechanism for data submission. A sample transfer is included as attachment 1. A flow chart and detailed process document is included as attachment 2. The flow chart includes three pages, the first being a high-level view of the entire project, with process 4 & 5 being the two levels associated to this project. They are shown at greater detail on the second and third page. Following the flow chart is a detailed description of processes 4 & 5 with specific requirements as they are currently envisioned. The data flow charts that have been created were for MA only, need charts for ME.

Although ACCSP envisions the current requirements defined in attachment 2 as unchanging, realistically this most likely will not be the case over the course of the project. ACCSP cannot promise that changes to the requirements will not occur, but will work to minimize as much as possible. However, the contractor should expect some change and factor that into their estimate.

Contractor shall develop software designed to run on multiple platforms, and transmit data in accordance with the API that is in compliance with the ACCSP Dealer and Trip Reporting Standards. Program standards in their entirety may be found on-line at: <http://www.accsp.org/documents/programdesign/2012/ACCSP_StandardsandAppendices2012_Final05082012.pdf>.

Software will be developed in two phases. The first will develop, test and deploy a version of the tool and related utilities for MA. The target for completion of the tool for MA is MIKE NEEDS TO FILL THIS IN.

Initially, software shall be evaluated and tested using a pilot group of MA commercial shellfish dealers. The second group will include Maine elver, sea urchin and scallop dealers. At the completion of testing, the software application will be available to any Program Partner who wishes to use it at no cost. Vendors who wish to use it will be provided with source code to use in creating add-ons that could be made available for purchase. The add-ons would not be expected as part of this project, but the software should support them.

For the purposes of this project, shellfish dealers are covered by the commercial reporting standards.

General requirements include:

* Software shall not require a connection to the internet for initial data entry.
* This software shall be compatible with the Apple, Droid and Windows environments, and shall work on at least a tablet and desktop,and pending development and positive testing of the practicality of a multiple page application, a smart phone as well.
* Software shall be intuitive and easy to use.
* Software shall be developed that utilizes SAFIS Dealer and Trip Reporting API for data submission to the ACCSP SAFIS system.
* Ability to have favorites/frequently used data available that can be configured to provide a standard default. Frequently used or ‘favorite’ data will pre-populate data fields in the application. This will provide for faster data entry and ease of use. Frequently used fields shall include the following data elements:
  + Landing locations (port of landing)
  + Species (including market and grade)
  + Fishing Effort (e.g. gear type, quantity, etc.)
  + Area Fished
  + Disposition of Catch
  + Port of landing
* Flexibility in the display of species purchased based on both a state specific species list (managed through SAFIS) and an individual favorites list (a subset of the state list).
* Simple rule based validation during data entry (i.e. price per pound, total pounds, etc.)
* Ability to transmit data at the end of each transaction, initiated by the user in MA and automatically in ME. The system must be able to enter data offline and transmit when in range of internet.
* The Maine system must monitor its own system compliance based off reporting frequency for each fishery activated on the program and only allow positive reports to be created when the system is deemed compliant. If the dealer’s system in not compliant, the system will only permit the sending of negative reports or previously created unsent purchases.
* Software must utilize https protocol for secure transmission. The application will be password protected.
* Software Contractor will make modifications/fixes as needed/possible during the pilot program – **this is critical to the success of the pilot program and the ability to streamline the process.**
* Software Updates shall be received via internet to the device. This shall include a mechanism to provide for updates to the ACCSP standard codes.
* ACCSP will store the data collected in the pilot program using the existing dealer and harvester reporting tables (also used by the ACCSP eDR and eTrips applications).
* Project Management/Reporting
  + ACCSP, MADMF and MEDMR will act as contract managers and shall be joint liaisons to the software contractor. Contractor shall be an active participant in the back and forth between users, and the contract managers.
  + Conference calls shall be set up on a regular basis between contract managers, users and the software developer to ensure that bugs are identified and fixed and comments/critiques are heard.
  + The contractor shall collaborate with the MADMF, MEDMR and ACCSP.
* ME Specific Requirements (developed and deployed during phase 2)
  + No manual entry if swipe card is not present. The system will not allow the dealer to edit any of their data once submitted.
  + After entry, a dealer should not be able to edit that transaction either via the application or via SAFIS.
  + The system shall provide a report consistent with providing a receipt for each purchase transaction.
  + The Maine reports will be purely dealer reports, not corresponding trip report will be created.
  + The system will provide a negative reporting feature that provides the capability of reporting for single or multiple days in a single transaction.
  + Magnetic cards will be required.
  + MEDMR logo should be displayed on startup screen.

### MA Pilot Testing

* + MADMF will work to recruit up to ten MA state-permitted commercial shellfish dealers.
  + Data entered via the pilot program will be compared against dealer reporting records by MADMF.
  + The developer, or appointed liaison, shall be the first line training and technical support provider for the application. Additional training and help-desk assistance will be provided by MADMF. The help-desk will be limited to business hours.
  + Back end support (database, network etc) shall be provided by ACCSP.
  + Feedback will be collected from dealers participating in the pilot program and harvesters who interact with the dealers.
  + A feedback mechanism will need to be included in the application.
  + Feedback will need to be made available to ACCSP, MADMF, and the developer.
  + Regular conference calls will be scheduled for ACCSP, MADMF and the developer to review any issues.
    - * At the completion of the project, exit interviews will be conducted by MADMF and reported to ACCSP.
* ME Pilot testing
  + MEDMR will identify elver, scallop and sea urchin dealers that will be required to use this program.
  + MEDMR staff will test card management system to ensure cards are able to be created, activated or deactivated.
  + MEDMR staff will use test swipe card program to create test data under various scenarios we have experienced.
  + MEDMR will set up meetings with industry to demonstrate system and answer any questions they might have.
  + MEDMR will pick several dealers from each fishery to test program and provide any feedback on the system before the full implementation.
  + Feedback from test dealers will need to be made available to ACCSP, MEDMR and the developer.
  + Regular conference calls will be scheduled for ACCSP, MEDMR and the developer to review any issues.
    - At the completion of the project, exit interviews will be conducted by MEDMR and reported to ACCSP.

**Deliverables**

* Deliverables will include:
  + Versions of the trip reporting system compatible with IOS, Windows and Android operating systems for both MA and ME.
  + Documentation of the software itself such that an outside expert would be able to expand or troubleshoot the system.
  + End user documentation
  + Participation in the Pilot Study and initial deployment as an iterative design exercise.
  + MA version will be available for pilot testing May 1, 2015
  + ME version will be available for pilot testing August 3, 2015

Respondents should provide a broad description of the approach to be taken. The description may include mock-ups for a data entry format. While not required, knowledge of the fishing industry will be helpful.

Please direct any questions to Michael Cahall, Director, ACCSP at mike.cahall@accsp.org.

The deadline for submission of proposal is January 2, 2015. A contractor will be selected within 10 working days. Submit your proposal to: Michael Cahall, Director, ACCSP and Laura Leach, Director of Finance and Administration via email ([mike.cahall@accsp.org](mailto:mike.cahall@accsp.org) and lleach@asmfc.org). Please contact Mr. Cahall or Mrs. Leach for further information.