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**LETTER OF INTEREST  
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<b>Title - Sujet</b> Acoustical Survey Vessel Charter	
<b>Solicitation No. - N° de l'invitation</b> F6086-180001/A	<b>Date</b> 2017-12-08
<b>Client Reference No. - N° de référence du client</b> F6086-180001	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$OLZ-012-6971
<b>File No. - N° de dossier</b> OLZ-7-40160 (012)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2018-01-04</b>	
<b>Time Zone</b> Fuseau horaire Newfoundland Standard Time NST	
<b>F.O.B. - F.A.B.</b> Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Hoskins, Nicole	<b>Buyer Id - Id de l'acheteur</b> olz012
<b>Telephone No. - N° de téléphone</b> (709) 772-8192 ( )	<b>FAX No. - N° de FAX</b> (709) 772-4603
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF FISHERIES AND OCEANS NAFC BLDG WHITE HILLS P.O.BOX 5667 ST JOHNS Newfoundland and Labrador A1C5X1 Canada	

Instructions: See Herein

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**LETTER OF INTEREST**  
**Acoustic Survey Vessel Charter – Department of Fisheries and Oceans**  
**Process Number: F6086-180001/A**

**REQUEST FOR INFORMATION**

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## **1. PURPOSE**

The purpose of this request for letters of interest is to:

- a) Determine the availability and characteristics of vessels from interested potential bidders on a charter to conduct a 60 day acoustic/trawl survey in the offshore waters of Newfoundland (NAFO Divisions 2HJ3KLNOP) from the coast line to the shelf break during the autumn (October and November) of 2018.
- b) Obtain feedback from potential bidders on the format and content of the attached requirement, identifying unforeseen logistical considerations to inform the final statement of requirement.

Please note that this is not a solicitation, and there is no commitment with respect to the issuance of any future contracts.

## **2. SURVEY DETAILS**

The survey period will be comprised of 2 days for loading and set-up, 1 day for disembarkation. Prior to surveying offshore 2-3 days will be dedicated to echosounder calibration while the vessel is at a 4 point anchor near St. John's.

The purpose of this survey is to provide an estimate of capelin biomass in NAFO Divisions 2J3KL to compare with historic survey values and current values derived from acoustic data acquired opportunistically during other surveys. In keeping with historic survey design, the survey will be comprised of equi-distant (10-20 nmi spacing) E-W parallel transects in NAFO divisions 2J3KL starting from the 100 m inshore depth contour to the 500m contour along the shelf break. Targeted fishing sets will be conducted to identify the observed acoustic signal. Fishing sets will occur at an average of 4 per day using a Campelen trawl, either fished on bottom or deployed mid-water. Each trawl will be less than or equal to one hour duration. If the acoustic signal is above the trawl zone a second bottom trawl will be immediately conducted in the same area to test the hypothesis that bottom trawl species and length composition is consistent with that taken higher in the water column. Physical oceanographic information will be collected at all set locations. Weights and numbers will be collected for all species and detailed biological sampling (including stomach contents) conducted on pelagic species and selected groundfish (Atlantic cod and Greenland halibut).

## **3. TYPE OF VESSEL**

It is anticipated that two sorts of vessels will be considered for this work:

- 1) Vessels designed and built as research vessels already fitted with the required instrumentation and systems; and
- 2) Commercial vessels which are able to be retrofitted with DFO equipment and systems for the duration of the survey.

## **4. REQUESTED INFORMATION**

Respondents are asked to provide the following information with their response, as well as any other information which they consider relevant:

- General details of the proposed vessel
- Availability and times lines for transit, retrofit (if required), mobilization and demobilization
- Time required from contract entry to start of survey
- Any published day rates available.

## 5. PROPOSED STATEMENT OF REQUIREMENTS

- 1) The vessel should be between 55 and 70 meters and must have the ability to work at seas for up to 35 days continuously, e.g. endurance of Vessel, provisions, water making system, etc.
- 2) The vessel must have suitable horsepower to tow a Campelen 1800 shrimp trawl fitted with rockhopper footgear at 5 knots midwater or on bottom in water depths up to 750 m.
- 3) The vessel must be able to maintain speeds of 12 kts on a continuous basis (24 hours per day).
- 4) The vessel shall have been actively used for commercial trawling or research surveys where trawl gear was used in the past 12 months.
- 5) All gear and equipment must be in good repair. The vessel must be completely rigged for trawling including:
  - a. A stern ramp with gallows or gantry.
  - b. Trawl winches fitted with trawl cable in good condition, sufficient for fishing the Campelen trawl. Winches should have the ability to retrieve the research trawl at the minimum rate of 61 m (200 ft) per minute.
- 6) Vessel must be able to conduct the work described above in Beaufort sea-state 6 and 7 conditions (Beaufort Scale 6: wind speed 22-27 knots; wave height 3.0-4.0 m. Beaufort Scale 7: wind speed 28-33 knots; wave height 4.0-5.5 m), which can be typical conditions in the survey areas in October and November.
- 7) Vessel must be ballasted to maintain sea-kindliness during the charter. Fuel oil considered as ballast should not be considered in the vessel's fuel-endurance estimation.
- 8) Preference will be given to vessel with a Type A ice class rating. All vessel must have an Unlimited - beyond 2000nm voyage class.
- 9) The Bidder must provide an unconditional, valid copy of the vessel's Transport Canada certificate Minimum Safe Manning Document – Convention with a Trading Area of *Unlimited Voyage*, or international equivalent, for the duration of the contract.
- 10) The Bidder must provide a valid copy of the vessel's Transport Canada (or recognized organization) Safety Management Certificate or international equivalent.
- 11) The Bidder must provide a valid copy of the vessel's Transport Canada (or recognized organization) Safety Equipment Certificate or international equivalent.
- 12) The Bidder must provide proof (copy) that the Captain(s) and officer(s) of the vessel possesses a valid certificate of competency that meets or exceeds the operation for size (gross tonnage) of the vessel and the area of Work (Unlimited Voyage or international equivalent).
- 13) The Bidder must provide proof (copies of certificates) that all crew members have valid Marine Emergency Duty (MED) A1 certificates or Standard for Training, Certification and Watchkeeping (STCW Basic Safety).
- 14) The Bidder must provide a copy of the vessel's Health and Safety Plan that is consistent with Transport Canada Safety Inspection Certificates or international equivalents.

- 15) The Bidder must provide documentation from an insurance broker, or an insurance company licensed to operate in Canada, stating that the Bidder, if awarded the contract as a result of the bid solicitation, can be insured in accordance with all conditions including Insurance Requirements.
- 16) The vessel must have lifesaving equipment sufficient for both the crew and 8 scientific personnel.
- 17) The vessel must accommodate 8 scientific personnel (8 individuals consisting of both genders) required for the duration of the mission.
  - a. provide sleeping accommodations for 8 scientific staff with a maximum of 4 individuals per cabin;
  - b. provide a minimum of 3 on-board meals per day for each shift (00:00-12:00 and 12:00-24:00);
  - c. provide drinking water, toilets, sinks, showers and hot water
  - d. provide access to 120V power supplied to all areas of the ship that Science personnel will use
- 18) The vessel must carry adequate vessel crew to safely conduct fishing activities as required during the full 24 hour period, but with no more than 12 hours of fishing to be conducted during any given 24 hour period.
- 19) The vessel must be equipped with a trawl monitoring system capable of recording the depth, opening and wing spread of the trawl. The depth sensor from this unit must also be made available for monitoring the deployment depth of other overboarded equipment if required.
- 20) The vessel must be equipped with a crane capable of lifting 5 mt (5.5 t) for loading gear, handling catches/trawl and plankton sampling gear. Crane system must be capable of vertically raising and lowering fishing and sampling gear a minimum of 5 meters off deck along the center line of the trawl deck. If no other offboarding system is available this crane must also be capable of being used in conjunction with a the oceanographic winch to support the block from which the plankton net will be deployed 2 m off the side of the vessel.
- 21) The vessel must have a minimum of 4 m of unobstructed trawl deck and the capacity to fleet the trawl into this space.
- 22) The vessel must be equipped with three scientific work spaces:
  - i) The first of these spaces (Control lab) should be located on the trawl or main deck and be at least 9 m<sup>2</sup>, be sheltered and heated with access to the rest of the vessel without passage across the trawl deck.. This room must contain: two 2 m benches and office chairs for four people. A reliable GPS feed and UPS protected 120 V power with outlets sufficient for operation of four computers and monitors. One computer rack in which dedicated scientific equipment (EK-80) will be mounted. Internet and internal vessel communications should be available in this space.
  - ii) The second space (Wetlab) should be located below the trawl deck and will be used for the sorting and sampling of trawl catch. This space must be sheltered and heated. Dimensions should be a minimum of 4 meters by 5 meters and it should contain a sorting belt, two 2 m \* 120 cm work benches, fifteen 40 lb fishing baskets. This space should be arranged so that it is easy to clean and a saltwater hose suitable for cleaning sorting table and sampling gear must be available. An on/off for this hose should be readily available from the working deck and ideally will have variable pressure settings (less pressure for sampling work, high pressure for cleaning). A mechanism for disposing of offal post sampling is required. Overhead lighting over each workbench sufficient to read small print (8 point) black print without strain. This space should also

contain access to 120 V power protected by a UPS and facilities to mount laptop computers and screens at each sampling station.

iii) The third space (Oceanography station) shall be located on the main or trawl deck and will be used to store/set-up and download CTDs and other oceanographic sampling equipment. This space must be sheltered and heated, a minimum of 2 \* 3 meters, and be fitted with a rack for 4 Niskin bottles, a large sink or similar mechanism for the disposal of unused water, a reliable navigational NMEA (GPS) feed, 120 V power, and a 40\*100 cm desk where a computer and other electronic equipment can be mounted. If found acceptable by DFO during inspection this space may be combined with the 'Control lab'.

- 23) The vessel must be equipped with, or be able to fitted with a hydraulic winch with 1000m of 5 strand electromechanical cable with a WLL of 2000 kg. The wet end of this cable winch must be terminated with a male SubSea 5 pin connector and a robust mechanical termination. The winch must be fitted with a slip ring and deck cable long enough to extend into either the control lab or the oceanography lab so that data may be viewed real time from overboarded instruments.
- 24) This winch must be positioned in such a manner that it can be paired with a launch recovery system (crane or A Frame) to launch and retrieve packages (CTDs and plankton nets) overboard, both while the vessel is on station and while underway at 2 kts. A mechanism (e.g. drop plank) which allows science staff or crew members to safely reach the winch cable in order to attach or detach Niskin bottles must be available at the point where the winch cable passes over the vessel rail.
- 25) The vessel must be equipped with a minimum of 4 m<sup>3</sup> freezer capacity with a sustained temperature of -20 degrees Celsius.
- 26) The vessel must be equipped with, or be able to be fitted with an Simrad EK80 echosounder system with four scientific split beam transducers (Simrad Model 7C) located in close proximity on the ship's hull (all transducers within a 1 m radius). Frequencies of the transducers will be 38, 70, 120 and 200 kHz. For vessels where this equipment is not supplied transducers should be mounted in such a manner as that they can be removed post survey without taking the vessel out of the water. Vessels being retrofit for this equipment will be required to use the transducer housing design (blister) supplied by the crown (see Appendix 1 for an example).
- 27) The vessel must be equipped with or be able to be fitted with all power and communication cabling and run-ways necessary to install the controlling EK80 computer and display on the main deck in addition to a remote display EK80 station in the wheelhouse. When surveying this wheelhouse unit will also be used for navigation.
- 28) The vessel must have available, or be able to be fitted with, a hydraulic winch and metering block for the deployment of electronic instrument packages such as CTDs and plankton nets. This winch will have a footprint of approximately 1.5\*1.5 meters and weigh 2000 kg and should be located in such a way that it can be used in conjunction with the over-boarding system either in a straight line or with a maximum of two 90 degree bends.
- 29) The vessel must provide satellite internet service available to science personnel for e-mail communication to shore at a minimum of 40 GB of service over the 60-day period.

- 30) The vessel must have sufficient dry space for storing DFO equipment and sample boxes (minimum 10 m<sup>3</sup>).
- 31) The vessel must have a minimum of 10 m<sup>3</sup> of space on or below deck for the storage of spare parts for the trawl.
- 32) The vessel must have accessible a launch or rescue craft which can be used to string a 3/8 " line under the vessel (inside of anchors). This line will be required for the deployment of a calibration sphere which is suspended under the transducers during calibration.

#### Captain and Crew

- 1) Captain and crew who can speak the English language must be available for each shift to ensure successful communication with scientific personnel.
- 2) A Captain with a minimum of 5 years' experience commanding a commercial trawler or survey vessel operations in the offshore.
- 3) A Fishing mate with over 5 years' experience conducting commercial or research trawl fishing. Fishing mate must be familiar with all aspects of shooting and retrieving of trawl, construction and rigging of the trawl and the making trawl repairs.
- 4) Deck crew should have a minimum of 2 years' experience shooting and retrieving, rigging and repairing trawls.

#### Operational Requirements

- 1) The vessel and crew shall be available for the full period of the contract. Vessel crew will be responsible for all vessel conduct including fishing and repair or fishing gear. In addition vessel crew will be required to assist in scientific sampling (e.g. sorting of catches) as requested.
- 2) Crew must provide a familiarization tour of the ship for scientific personnel and inform them of safety equipment and procedures, ensuring the safety of equipment and personnel throughout duration of the contract, and provide safe working areas on the ship.
- 3) Crew must be willing to assist with the loading and unloading of science equipment as required (e.g., shipboard crane operations, manual lifting if necessary, etc.).
- 4) Crew must be willing to deploy/recover and/or assist with the deployment/recovery of oceanographic measurement devices and sea sampling equipment according to information provided by the Chief Scientist. Crew must be available to assist in the sorting of catches and washdown of plankton gear if required.
- 5) The vessel and crew shall accommodate two 12-hour science personnel shifts (0000h-1200h and 1200h-2400h). Crew deckhand(s) must be available to operate winches and cranes during each science personnel shift.

- 6) In the event that the vessel requires retrofit of scientific equipment, expenses associated with the installation and removal of this equipment as specified in the Statement of Work (including but not limited to welding, electrical or hydraulic work), an estimate of retrofit costs must be included in the submitted Expression of interest as a separate item.
- 7) The Charter Vessel must maintain the condition and quality of the vessel's main warps, and the DFO net, bridles, doors, floats, footrope chain and wing-end chains during the survey.
- 8) In the event of damage to the net, it shall be restored to its original dimensions (this means that every damaged mesh must be mended to the original conditions as supplied to the vessel).
- 9) The Contractor will have to show proof of sufficient insurance in case of the loss of the trawl or trawl mounted CTD while at sea. (I am thinking they may not be able to ensure items they don't own).
- 10) If the vessel is unable to operate safely in the work area because of sea or weather conditions, as agreed to by the Captain (or representative) and Chief Scientist (or representative), for any more than 3 days then the Contractor will agree to extend the contract period, as necessary, to be determined by the Chief Scientist, to cover the lost time at Canada's expense.
- 11) If the vessel is disabled or is not in running order or is laid up for greater than 24 hours without the consent of Canada, then Canada will not be liable for payment for the hire of the vessel during this period. If this period exceeds one week, Canada may terminate the Contract immediately for default.
- 12) If any gear or equipment necessary for the efficient operation of the vessel for the purpose of the Contract is not in good working order for any period of time, then the payment of hire will cease for the lost time, and if during the voyage the speed is reduced by a defect in or breakdown of any part of the hull, machinery or equipment, the time lost will be deducted from the hire. Canada will be the sole judge of the capability of the vessel.
- 13) If the particulars furnished by the Contractor and set out in the Contract are incorrect or misleading, Canada may, at Canada's discretion, terminate the Contract for default.
- 14) Contractor is responsible for all costs associated with all port calls.
- 15) All vessel modifications required for the installation of provided equipment, including all welding, hydraulic or electrical work will be the expense of the bidder.
- 16) The vessel will be subject to inspection prior to commencement of survey. The adequacy of the vessel's accommodations, safety equipment and procedures, fitting and operations of science equipment, space available for science activities will be evaluated. Issues of vessel safety, crew safety, and vessel cleanliness must be rectified at the Contractor's expense prior to commencement of the survey operations.

#### SUPPORT AND EQUIPMENT PROVIDED BY CANADA

All vessels:

- i) Computer systems for collection of biological data from fish sampled in the wetlab
- ii) Plankton sampling gear (Bongo frames, nets and depressor)

- iii) Campelen 1800 bottom trawl, doors and spare parts
- iv) Fish sampling equipment (measuring boards, knives etc)

If not already fitted:

- v) CTD for mounting to trawl headrope and associated download cables.
- vi) Mechanical metering block
- vii) Niskin bottles
- viii) Campelen 1800 bottom trawl and doors
- ix) Four split beam transducers
- x) EK80 deckunit and display on main deck (control lab)
- xi) Computer with remote display of EK80 data for installation in wheelhouse
- xii) Marine scientific balances (for installation in wetlab)

#### LICENSES AND PERMITS

The Contractor must obtain and maintain all permits, licenses, and certificates of approval required for the Work to be performed under any applicable federal, provincial, or municipal legislation. The Contractor is responsible for any charges imposed by such legislation or regulations. Upon request, the Contractor must provide a copy of any such permit, license, or certificate to Canada.

#### VESSEL INSPECTION

All bidders must be willing to make their vessel available for inspection by DFO personnel following the close of this expression of interest at a mutually agreeable time.

**Annex 1 - Example of a blister and transducer mounting on a 63 m vessel research vessel (CCGS Teleost)**

The four transducers (models ES38-7C, ES70-7C, ES120-7C and ES200-7C) shall be tightly co-located on the hull in a new blister, which is nearly mid-ship, about 1 m away from the keel on the side of choice. The design and mounting location shall be selected to minimize acoustic interference from water flow noise and from air bubbles drawn down along the vessel's hull and keel. Figure 1 is a drawing of a similar mounting on a 63 m research vessel. In this case the blister was sized to accommodate 2 additional (12 and 400 kHz) in case they became available. These frequencies shall not be required for the current application so the blister will not need not be this large. For protection of the transducer cables, heavy walled steel conduits were installed (as per regulations) from the hull blister location to location of the GPTs on the lower deck (see photo 1).

**Figure 1. Transceiver units, junction boxes (under GPTs), transducer conduits, cables to the transducer conduits and network switch mounting.**



**Figure 2. Blister drawing (top left), front of installation (top right) and rear (lower) view of the blister for the transducers. In this case the blister is located about 1 meter outboard of the keel.**

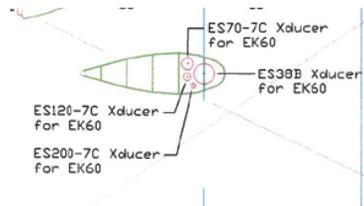


Figure 3. Side view of the blister showing the cable access plate (upper) and bottom view showing transducer placements (lower).

