The following are UAF’s answers to questions received from potential offerors regarding the above referenced solicitation:

5.1 QUESTION: Ref: Section 3.4 – General Requirements for Equipment, Machinery, and Materials

Is 17-4PH Stainless Steel also acceptable?

ANSWER: No. 17-4PH does not have the corrosion resistance properties needed for our application.

5.2 QUESTION: Ref: Section 4 – Design Accelerations During A-Frame Operating

Are wind, snow & ice loading conditions to be included with the 120,000 lbs break strength load case?

ANSWER: Yes, include wind, snow and ice loads with the 120,000 lbf load.

5.3 QUESTION: Ref: Section 4 – Design Accelerations During A-Frame Operating

It is assumed that the longitudinal and lateral accelerations already include the static effects from pitch & roll. Are all of these accelerations assumed to occur simultaneously?

ANSWER: These maximum values occur at different headings, so, technically, they do not have to be combined. A common compromise is to have load cases for (1) maximum vertical acceleration with maximum transverse acceleration and (2) maximum vertical acceleration with maximum longitudinal acceleration. This approach is reasonably conservative.

5.4 QUESTION: Ref: Section 5.1 – Design Criteria – A-Frame Assembly

These references were not included in the original RFQ document package.

ANSWER: Per Amendment 1 Reference 2 was deleted and a link provided for Reference 3.

5.5 QUESTION: Ref: Section 5.3 – Design Criteria – Overboarding Design Loads
Does this include accelerations, wind, snow & ice loading as well.

**ANSWER:** No.

5.6 **QUESTION:** Ref: Section 5.3 – Design Criteria – Overboarding Design Loads

Reviewed to what criteria: 46 CFR § 189.35?

**ANSWER:** Yes.

5.7 **QUESTION:** Ref: Section 5.3.1 – Design Criteria – Overboarding Design Loads – Primary Load Lines

Confirm the horizontal positions of the padeyes (CP, CL & CS at 3’-10” from centerline of vessel), (FP, LP, FS & LS at 16’-4” from centerline of vessel) per “A-Frame Standard Bolting Flange” drawing.

**ANSWER:** The padeyes can be located anywhere along the 18 ft wide bolting flange although port winch wire leads will be assumed to lead to a padeye on centerline or to port on the bolting flange, starboard winch wire leads will be assumed to lead to a padeye on centerline or to starboard on the bolting flange.

5.8 **QUESTION:** Ref: Section 5.3.3 – Design Criteria – Overboarding Design Loads – Tugger Line Load

What is the specific location of the tugger winch on the crossbar (centerline, xx” port or starboard)? In what position should it be assumed the A-Frame is at when using the tugger winch (Inboard, vertical, primary outboard or secondary outboard)? It is unclear how the tugger winch line will not interfere with the main winch line at all possible A-Frame positions. The A-Frame Replacement Concept drawing shows the tugger winch mounted to the UNOLS Standard Bolting Flange. Need better guidance.

**ANSWER:** The tugger base should have a hole pattern on it allowing it to be mounted to the underside fo the trunnion plate as shown in the concept drawing. It will be located as needed by the ship.

5.9 **QUESTION:** Ref: Section 5.3.4 – Design Criteria – Overboarding Design Loads – Tag Line Tugger Winch Loads

Where, specifically should the tag line winches be mounted (height above deck) and where do the tag lines run to? In order to keep the 20’ clear distance between the A-Frame legs, the tag line winches would need to be mounted on either the inboard or outboard side of the A-Frame legs.

**ANSWER:** The tag line winches should be mounted approximately 4 feet off the deck on either the forward or aft side of the A-frame legs.

5.10 **QUESTION:** Ref: Section 5.4 – Design Criteria – Luffing Design Load

Per Section 5.3.3 Tugger Line Load: the 20,000 to 30,000 lb load represents the breaking strength of the tugger winch line. Is the A-Frame luffing system to be designed to physically move a load that is equivalent to the breaking strength of the tugger winch line?

**ANSWER:** The bare drum maximum line pull will be 20 kips. The A-frame luffing load is to accommodate the load from the tugger winch as well as the load defined in Section 5.4. Thus the A-
frame should be able to luff the maximum load supported by just the tugger winch OR the maximum load when suspended from a wire reeved through the A-frame and fairled back to a charter or ship supplied permanent winch.

5.11 QUESTION: Ref: Section 5.5 – Design Criteria – Vessel Structural Interface

What is the material of the flush deck insert? What were the original A-Frame foundation design loads (thrust, shear and overturning moment) of the existing foundation?

ANSWER: The existing foundation material is DH36 Steel. UAF does not have the original design load footprint. Offerer must take it upon themselves to verify adequacy of existing structure or determine what additional structure must be added.

5.12 QUESTION: Ref: Section 6.1.1 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Trunnion Bolting Plate

Is the standard UNOLS bolt pattern designed to handle the 120,000 lb loading per the CFR 46 § 189.35 requirements?

ANSWER: No. This reference to be used only for hole spacing dimensions.

5.13 QUESTION: Ref: Section 6.1.6 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Crossbeam Tugger Winch

Is this tugger winch mounded to the fixed cross beam (if so where) or to the bolting flange as shown on the A-Frame Replacement Concept drawing?

ANSWER: Mounted to the bolting flange.

5.14 QUESTION: Ref: Section 6.1.6.1 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Crossbeam Tugger Winch – Full Drum Line Pull

The maximum tugger winch line breaking strength is specified at 20,000-30,000 lbs, which translates to a WRSF (Wire Rope Safety Factor) of 1.17 to 1.76. Is this correct?

ANSWER: To be amended to 1-1/8” 12 strand Spectra line diameter. Length to stay the same.

5.15 QUESTION: Ref: Section 6.1.6.2 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Crossbeam Tugger Winch – Bare Drum Line Pull

Is it 20 ft/min at 17,000 lbs?

ANSWER: At least 20 ft/min at the Bare Drum pull of the winch.

5.16 QUESTION: Ref: Section 6.1.6.3 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Crossbeam Tugger Winch – Winch Drum Capacity

½” Spectra 12 strand has a breaking (tensile) strength of 22,500 pounds, OK.

ANSWER: To be amended to 1-1/8” 12 strand Spectra line diameter. Length to stay the same.

5.17 QUESTION: Ref: Section 6.1.6.7 – A-Frame Arrangement and Outfit – A-Frame Crossbeam – Crossbeam Tugger Winch – Load Monitoring

Assume a wireless load cell at the end of the tugger winch line would be acceptable. Does the load cell need to read up to the breaking strength of the line?
5.18 QUESTION: Ref: Section 6.2 – A-Frame Arrangement and Outfit – A-Frame Legs

What are the handrails intended for?

ANSWER: See 6.2.3

5.19 QUESTION: Ref: Section 6.2.1.3 – A-Frame Arrangement and Outfit – A-Frame Legs – Tugger Line Winches – Bare Drum Line Pull

Is the 20 ft/min with the 5,000 lbs maximum winch capacity?

ANSWER: The min 20 ft/min should be at the bare drum line pull.

5.20 QUESTION: Ref: Section 6.2.1.5 – A-Frame Arrangement and Outfit – A-Frame Legs – Tugger Line Winches – Winch Line

Per Section 5.3.4 Overboard Information Loads, A-Frame will be rated to handle simultaneous line break strengths of 20,000 lbs. A 2/2” Polyester Double Braid rope has a breaking strength of 8,400 lbs. Although this is less than the 20,000 lb design load, it seems light. ½” Spectra 12 Strand has a breaking strength of 22,500 lbs which is greater than 20,000 lbs. Would using the ½ Spectra be acceptable?

ANSWER: These are tag lines not expected to exert significant downward loads on the frame. Spectra, ½”, may be assumed.

5.21 QUESTION: Ref: Section 6.2.1.7 – A-Frame Arrangement and Outfit – A-Frame Legs – Tugger Line Winches – Cleats

Please provide typical dimensions for cleats used in similar applications.

ANSWER: 12” cleats may be assumed. One on each leg.

5.22 QUESTION: Ref: Section 6.2.1.8 – A-Frame Arrangement and Outfit – A-Frame Legs – Tugger Line Winches – Tag Line Padeyes

Need to be more specific as to the location of these padeyes.

ANSWER: Padeye locations somewhat dependent on frame configuration. Locations to be developed during design.

5.23 QUESTION: Ref: Section 6.2.2 – A-Frame Arrangement and Outfit – A-Frame Legs – Bolted Wings

Per comment on Section 5.3.2, can these additional wings be permanently welded to the A-Frame legs rather than bolted. This would eliminate the need to physically move the wings from one location to another. It would simplify the design of the A-Frame and allow for faster rigging change over.

ANSWER: No.
5.24 **QUESTION:** Ref: Section 6.2.3 – A-Frame Arrangement and Outfit – A-Frame Legs – Hand Rails and Pinch Guards

Are the handrails to be attached to the A-Frame itself or to the vessel deck?

**ANSWER:** *To the A-Frame.*

5.25 **QUESTION:** Ref: Section 6.3 – A-Frame Arrangement and Outfit – A-Frame Foundation

This drawing appears to have errors. Some of the reference dimensions are incorrect and the physical representation of the mounting holes to not agree with the dimensions on the drawing. UAF to verify.

**ANSWER:** *UAF will verify. The As-built version will be forwarded. Additionally, the Offerer should verify during shipcheck.*

5.26 **QUESTION:** Ref: Section 7.2 – Power, Control, and Monitoring Subsystem – A-Frame Speed

What is the “Full Luffing Load” defined as? Since this a performance requirement, it does not make sense that line breaking strength would be a design consideration. This specification does not indicate an actual A-Frame SWL (Safe Working Load) which would include normal line safety factors (not breaking strengths).

**ANSWER:** *See section 5.4. UNOLS Appendix B references MPT which is used in this specification.*

5.27 **QUESTION:** Ref: Section 7.3.1 – Power, Control, and Monitoring Subsystem – Operator Interface – Deck Operator Wireless Remote (Belly Pack)

This specification only references equipment directly associated with the A-Frame, of which the Science Winches are not part of that scope. No interface information for the Science Winches was given.

**ANSWER:** *See Amendment No. 3.*

5.28 **QUESTION:** Ref: Section 7.3.2 – Power, Control, and Monitoring Subsystem – Operator Interface – Science Control Room Wireless Control

Isn’t this just a duplicate wireless control as the “Deck Operator Wireless Remote Control”? If this control is intended to be operated from inside the science control room, wouldn’t a hard wired panel mounted unit (similar to the deck cranes) be a better option?

**ANSWER:** *A wireless “hard-mounted” control integrated into the existing console is envisioned. Wireless in order to simplify installation.*

5.29 **QUESTION:** Ref: Section 7.3.3 – Power, Control, and Monitoring Subsystem – Operator Interface – Emergency Controls

Since there is no physical view of the A-Frame and associated winches from the thruster room, should these hard wired “Emergency Controls” be located where the operator has an actual line of site to the equipment? The specification already calls out for a duplicate set of manual controls for the Thruster Room. This would be O.K. for the final set of back-up emergency controls.

**ANSWER:** *Deck mounted emergency controls will be considered.*
5.30 **QUESTION:** Ref: Section 8.1 – Construction Specifications – Cylinders

Does this refer to the cylinder load holding valves?

**ANSWER:** Yes.

5.31 **QUESTION:** Ref: Section 8.2 – Construction Specifications – Welds

Full penetration welds will be based on structural design considerations. Fillet welds and other partial penetration welds would be used based on structural design considerations. All weld joints would be 100% (no open seams) to inhibit corrosion.

**ANSWER:** Correct.

5.32 **QUESTION:** Ref: Section 8.6 – Construction Specifications – Hydraulic Oil Cleanliness

Per the RFP hydraulic documentation, required hydraulic cleanliness is 20/17/14 to ISO 4406. Please confirm.

**ANSWER:** Default to the cleanliness value shown in this RFP.

5.33 **QUESTION:** Hydraulic system: What type of pump is provided? Fixed displacement or variable displacement? If variable displacement is it load sensing or pressure compensated?

**ANSWER:** 2 x 73 HP, Pressure compensated open loop, variable displacement, 40gpm with max pressure of 3,250 psi. Per Section 7.5, the existing A-frame operates at 80 GPM and 3000 psi.

5.34 **QUESTION:** Where is the control valve to be located? Below deck where the old valve is located? Are we to use the existing piping? Please expand on this subject.

**ANSWER:** Yes, locate control valve below deck where old valve is located. Use existing piping to the extent practical.

5.35 **QUESTION:** How many total lights are required? 4 or 8?

**ANSWER:** 4, two on each side of the frame.

5.36 **QUESTION:** Confirm controls set up. 1 wireless control and 1 wired control? Wireless control only operates the A-Frame and tugger winches?

**ANSWER:** Two wireless controls are envisioned: one on the belly-pack and one hard-mounted in the Aft Science Control Room. Controls will operate the A-frame and tugger winches only.

5.37 **QUESTION:** Are the snatch blocks or deflection sheaves for the tugger winches?

**ANSWER:** The snatch blocks serve the existing built-in traction and hydro winches.

5.38 **QUESTION:** Confirm all hose ends and fittings are to be stainless steel?

**ANSWER:** Per Section 8.3, all tubing and fittings shall be 316 stainless steel.
5.39 **QUESTION:** Tugger winch is mounted on each of the A-Frames legs. Is the idea to allow wire rope just drop down off the winch or should the line go up to snatch block hung off an standoff with a pad eye and then down to the load?

**ANSWER:** The final arrangement of the two tag line winches will depend somewhat on the frame geometry and will be discussed in detail at the 25% Design Review Meeting. For the present, assume the winches are arranged with the wire leads horizontal, or at a slight downward angle, and located on the aft side of each leg. No other rigging, e.g., snatch block to be assumed at this time.

5.40 **QUESTION:** Tag lines tuggers shall be arranged to rout the winch line parallel to the deck when attached to the science package 4’ off the deck at vertical A-Frame position. Since tuggers are located up on the A-Frame legs how winch line could be routed parallel to the deck?

**ANSWER:** This assumes the tag lines lead inboard to the overboarding package horizontally (and therefore parallel to the deck) 4 ft above the deck.

5.41 **QUESTION:** Define snap hook terminations? Is in it a snap hook and a terminations of the wire rope to accept the snap hook? Do we provide snap hook terminations and should these terminations be 20k rated.

**ANSWER:** Yes, wire rope will terminate in a snap hook with 20K capacity.

5.42 **QUESTION:** Is it required to submit any preliminary calculations for this quote?

**ANSWER:** The submittal requirements are shown in Section 2. Any calculations supporting the estimated weight and centers would be of interest to UAF.

5.43 **QUESTION:** Please clarify the A-frame speed requirements with the tugger winch.

**ANSWER:** The required speed of the A-frame, 2 deg/sec, assumes that the tugger winch is not activated simultaneously. Offerer to provide estimate of speed reduction when operating the tugger winch.

5.44 **QUESTION:** What are the dimensions and weight of the existing frame?

**ANSWER:** The existing frame is estimated to weigh approximately: 37,000 lbs. Basic dimensions: see attached pdf. Existing A-Frame Dimensions.pdf

5.45 **QUESTION:** Clarify the required load test for the frame.

**ANSWER:** Per 46 CFR 189.35-5 “Tests should normally consist of exercising the equipment as a unit with a proof load 25 percent in excess of the equipment’s normal working load, however manufacturer’s design limitations should not be exceeded. Consideration shall be given to the plans of loading when conducting these tests. Braking, safety and limiting devices shall be tested whenever feasible.”

5.46 **QUESTION:** Can DnV-GL regs be used.

**ANSWER:** UAF would like to re-emphasize that we have no objection to the use of DnV-GL certification but note that the USCG requirements of 46CFR 189.35 are more stringent since the required load is a function of the breaking strength of the largest wire to be used.

5.47 **QUESTION:** Does the vessel plan on lifting loads with these tugger winches alone (no oceanographic winch cable)?
ANSWER: The tugger winch mounted on the cross beam will be used to lift loads. The tag line tugger winches on the A-frame legs are to be used only for positioning loads under the frame.

5.48 QUESTION: Does the vessel expect the tugger winches to pull with a certain amount of force with the ability to reel in or pay out while tugging with a constant force (constant tension) or to pull then hold in a position like a typical winch with a counter balance/brake stop valve?

ANSWER: Required pull forces for the tag line tuggers are given in Section 6.2. It is envisioned that these would not be constant tension winches.

5.49 QUESTION: Please expand on the use of the tugger winches so we may fully understand how they will be loaded.

ANSWER: The tag line winches will serve to keep loads from swinging transversely under the frame, e.g., such as when launching a buoy or large scientific package with the A-frame.

5.50 QUESTION: Is the successful vendor required to provide fairleads or turning sheaves for routing of tugger winch cable?

ANSWER: No.

5.51 QUESTION: Installation and Testing

Is there a standard test, document, procedure, or CRF from the Coast Guard regarding testing?

ANSWER: Per 46 CFR 189.35-5 “Tests should normally consist of exercising the equipment as a unit with a proof load 25 percent in excess of the equipment’s normal working load, however manufacturer’s design limitations should not be exceeded. Consideration shall be given to the plans of loading when conducting these tests. Braking, safety and limiting devices shall be tested whenever feasible.”

5.52 QUESTION: Is there information on the existing deck and deck structure?

ANSWER: See attached pdf. 0650-100-02 Structure 01 Level and Below – Key Plan and Notes Rev (C)

5.53 QUESTION: RC belly pack for operation, it isn't likely that the load display can be mounted directly on it due to the different voltages used by the radio remote and the load management system. Load system uses 12 or 24 vdc and the wireless remote uses 5.6 vdc powered by a rechargeable NiCad battery. Can the load display be mounted stationary to the A-Frame or other ships structure for readout and warnings with the radio remote belly pack being mobile? If this is possible the power problem would be solved.

ANSWER: This is acceptable.

5.54 In response to questions received regarding the installation requirements UAF provides the following clarifications:

In section 10.2 of the Statement of Work delete the first two paragraphs. Insert the following paragraph:

The existing A-frame shall be removed and the new A-frame installed by the Contractor. The Contractor shall provide all labor, materials, equipment, and marine chemist services to perform this work at a pierside location. Included in the installation scope shall the final testing
of the A-frame in accordance with the Shipboard Test Plan submitted by the Contractor. This should include any modifications the Contractor deems necessary to the existing A-frame foundation to accommodate the new A-frame. It is expected the ship will be moored in Seward, Alaska for the installation. The existing A-frame shall be disposed of by the Contractor.

In section 10.3 of the Statement of Work delete the second sentence in the first paragraph (the sentence that says "Costs for load testing shall be paid by the Owner"). Insert in its place:

The Contractor is responsible for conducting the load test and the costs for that. The costs of ship time and any ship’s crew needed to support this testing shall be provided by the Owner at no cost to the Contractor.

In section III.C Installation of the RFP,

Delete the first two paragraphs. Replace them with

The existing A-frame shall be removed and the new A-frame installed and tested in accordance with the Shipboard Test Plan by the Contractor. The Contractor shall provide all labor, materials, equipment, and marine chemist services needed to perform this work at a pierside location. For purposes of responding to this RFP, assume that the ship will be pierside in Seward, Alaska at the Alaska Railroad Seward Intermodal Facility. UAF may elect to change the installation location to a port on the west coast in the event that better suits the ship’s 2016 science schedule. UAF will make this decision no later than five (5) months prior to delivery. The existing A-frame shall be disposed of by the Contractor.

5.55 The submittal date on the Rate Response Form is amended to read “September 12, 2014”.

The submittal deadline remains September 12, 2014 3:00 p.m. local time. All other terms, conditions, and specifications, of the original Request for Proposals remain unchanged.

University of Alaska Fairbanks,

John A. Hebard, C.P.M.
Director of Procurement and Contract Services

The Amendment becomes part of the Request for Proposal and modifies the original RFP document. This Amendment shall be acknowledged by signing below and returning it by mail prior to the submittal deadline, or by indicating acknowledgment on your proposal cover sheet.

ACKNOWLEDGEMENT

________________________________________
Company Name

________________________________________
Authorized Signature and Date

________________________________________
Name and Title (Print or Type)