

# Samoa Shipping Corporation Ltd

## REQUEST FOR QUOTATIONS (RFQ)

*To conduct a Multibeam Bathymetric Survey at Mulifanua Port Channel*



Date: Jan 2019

Project: Multibeam Bathymetric Survey



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**Samoa Shipping Corporation Ltd.**

**“REQUEST FOR QUOTATIONS”**

**JANUARY 2019**



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# 1 GENERAL

This document describes the requirements for the Request for Proposals and execution of a Survey Project to be conducted by a Contractor to be selected (hereafter to be called “Contractor”). The Request for Proposal is put on the market by Samoa Shipping Company Ltd. (SSC) (hereafter to be called the “Client”).

The Client, is a leader of Inter-Island passenger and sea freight transportation in Samoa. The principal purpose of the Client is to operate a vehicular and passenger ferry between Samoa and its neighboring islands.

## 1.1 PROJECT DESCRIPTION

The Client intends to maintain the safe access of the channel and turning basin to optimize the safety of navigation for vessels operating at the Mulifanua Port which is located at the western side of Upolu Island in Samoa. Currently every two hours there will be a sea transportation services for Samoa’s domestic services. To extend these transportation services, it is necessary to deepening and widening the channel and turning basin to secure and guarantee the safety of navigation for vessels operating at Mulifanua Port.

## 1.2 SURVEY AREA

The area to be surveyed is bounded as shown in Fig. 1. The area is bounded by red and green navigation lights. The survey has to be executed inside these navigations light but also approximately 30 meters outside both sides of the navigation-lights.



Fig 1: Area to be surveyed



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### 1.3 OBJECTIVE OF THE SURVEY

To extend the sea transportation services for Samoa's domestic services, it is necessary to deepen and widen the channel and turning basin to secure and guarantee the safe navigation for all Corporation Ferries. Given the critical shallow and narrow conditions of the Mulifanua Port channel, the Client needs a good overview of the consequences of these extensions and all the information and data obtained from the survey will be utilized as the basis for the execution of the maintenance dredging requirements needed for the Maintenance Dredging Project.

## 2 CONTRACT PROCEDURE

The Contractor is invited to submit a quotation on the project mentioned above with regards to the provisions for the execution of this project and the deliverables stated in this document.

Selection of a Contractor will be based on both price (50%) and quality (50%). The tender documents as supplied by the Contractor shall contain at least the following information:

- Quotation for the entire project on a lump sum basis including a breakdown into:
  - o Equipment hire
  - o Mobilisation costs
  - o Survey costs
  - o De-mobilisation costs
  - o Processing costs
  - o Detailed project planning
  - o Project plan stating at least:
    - o Equipment intended to be used
    - o Personnel including proposed role in the project and brief resume
    - o Mobilisation plan for the vessel
    - o Calibration procedures
    - o Survey plan (including line plan and log method)
    - o Quality assurance and control procedures during the project
    - o Processing plan (including interpolation and volume calculation algorithms to be used)

### 2.1 PROJECT TIMEFRAME

Contractor may submit his quotation either hand delivered OR by e-mail to the Client before the 08<sup>th</sup> February 2019 at 1400 hrs. (Local time). Tenders received after this date and time are not eligible for award. The project has to be executed between March and April 2019.

The vessel and equipment shall be de-mobilised to its original state by the Contractor on the fifth day after the day the mobilisation has commenced.

The deliverables from the project shall be delivered to the Client no later than 5 days after finishing the project.

Contractor shall assign a Project Manager to the project. All formal communication with the Client during the tendering phase shall be through the Project Manager.



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Client will give the Contractors the ability to submit written questions via e-mail to: [willie@samoashipping.com](mailto:willie@samoashipping.com) before the 01<sup>st</sup> February 2019. Answers will be provided in writing no later than the 08<sup>th</sup> February 2019. Questions and answers will be forwarded to all the assigned Project Managers of all pre-selected Contractors.



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### **3 EQUIPMENT AND PARAMETERS**

#### **3.1 EQUIPMENT**

Client shall provide the Contractor with a vessel deemed suitable for the execution of this project. Details of this vessel can be found in the appendices.

Contractor shall state in the project plan the sensors and software needed for the execution of the project. Client shall, upon acceptance of the project plan, ensure that the requested equipment or suitable replacements are available on the day of mobilisation. Contractor shall make certain that equipment is properly labelled upon reception; that an inventory list is made and that all equipment is restored to their original packaging without any loss of equipment or spares.

#### **3.2 GEODETIC PARAMETERS**

The survey results shall be presented using positions in the unit meters with a resolution of at least 2 (two) decimals, referenced to the WGS 84 and Local Chart Datum. Heights lying below chart datum shall be designated as negative heights. Differences shall always be in accordance with the following: Last survey – previous survey = difference

#### **3.3 REFERENCE POINTS**

Client shall provide the Contractor with reference points near the project area in advance. Location and coordinates (X,Y in WGS 84-system, Z relative to Local Chart Datum) will be handed to the Contractor in advance of the project. Contractor may use these points during the survey work.

Any land survey work shall be performed prior to the mobilisation of the vessel using suitable information and with a precision that is sufficient for calibration and checking of the suggested survey system.

### **4 QUALITY ASSURANCE AND CONTROL**

#### **4.1 RESOLUTION**

The survey shall be executed with a Multibeam Survey system. Single beam survey will NOT be accepted.

Contractor shall make his strategy for quality control available to the Client well before the start of the project.



## 4.2 PRECISIONS

With regard to the survey accuracy, Contractor should achieve the following:

	Systematic error (meters)	Precision (2 $\sigma$ in meters)
Horizontal	$\leq 1$	$\leq 2$
Vertical	$\leq (0.030 + 0.005 * depth)$	$\leq (0.05 + 0.01 * depth)$

The survey system should be set-up and calibrated in such a manner that the systematic errors in any individual measurement is less than the amount indicated above.

The horizontal position indicated is that which is achieved at sensor depth for the depth measurement sensor. Where depth is stated, the vertical distance between chart datum and the point measured is meant. Detailed specifications can be found in Appendix B.

## 4.3 CALIBRATIONS

Contractor shall provide the Client with a procedure stating the calibration of all the survey equipment to be used (positioning as well as acquisition sensors) including the correction methods for all possible and allowable motions of the measuring equipment during the survey.

## 5 DELIVERABLES AND REPORTING

The following deliverables and reports are required:

- Mobilisation report
- Daily survey report
- Field reports
- Final report
- Charts
- Digital data

**Note:** a paper copy of the report and charts is required. All digital copy of the reports, charts and all the digital survey and report data must be provided on one USB-stick.

### 5.1 MOBILISATION REPORT

The mobilization report shall include a brief description of activities, the results and the various checklists and certificates completed during mobilization. This report shall then form a basis for a historical vessel folder incorporating details of all subsequent calibrations.

### 5.2 DAILY REPORT

The daily survey report shall include a brief description of activities and specific communications during a (one) full survey day.





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### 5.3 FIELD REPORTS

The field report shall detail all information related to the actual survey lines, data acquisition and processing. Any change in survey parameters shall be stated on the field report as well as all items deemed interesting to the survey objective and the documentation thereof.

### 5.4 FINAL REPORT

On conclusion of the project a final report will be issued containing the following sections as a minimum:

- System Verifications / Calibrations
- Summary of results
- Bathymetric chart of the access channel and turning basin
- Depth difference charts with respect to the previous surveys.
- Amount of sediment with respect to the previous survey.

#### 5.4.1 Charts

A hardcopy (result) of the survey at a maximum size of A0 shall be delivered to the Client as an appendix to the final report. The scale to be used shall be at least 1:2500.

The orientation of the chart is such that North is identified by the top of the chart. A unique, recognizable and uniform stamp according to the quality system of the Contractor should identify the charts. The relevant employees of the Contractor shall sign the charts.

Charts shall contain all the relevant metadata needed to identify geodetic system, systems or surveys used, time of survey etc etc.

#### 5.4.2 Digital data

The Contractor shall supply the following information on a digital medium such as CD-ROM or DVD to the Client:

- Result files (see hereunder)
- Raw data as acquired by the survey acquisition software
- Supplementary data files such as sound velocity profiles etc.
- Digital version in word and pdf format of the final report
- Digital version in word or pdf of the accompanying charts.

The results from the survey shall be delivered to the Client using a logical file naming system to be determined by the Contractor. The actually measured points (X,Y,Z,) shall be delivered. Data shall be delivered as ASCII form data. If the interpolated data is gridded then the grid form shall be rectangular with the lower left corner of the grid indicating the origin of the grid. The exported data shall contain the average depth per bin.

All raw data files shall be provided to the Client as well; Client reserves the right to re process the data at any time.



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## **6. GENERAL INFORMATION**

- 6.1** SSC, at its sole discretion, reserves the right to accept or reject any or all proposals received as a result of this RFQ, to issue subsequent Requests for Quotations, negotiate with any qualified source(s), or to cancel this RFQ in part or in its entirety;
- 6.2** This RFQ is not in any way to be construed as an agreement, obligation or other contract between SSC and any person or firm submitting a proposal, nor does it obligate SSC to pay for any costs incurred in preparation and submission of proposals or in anticipation of a contract;
- 6.3** All materials submitted in response to this request becomes the property of SSC and will not be returned. SSC reserves the right to use any or all the Proposer service ideas presented. Selection and rejection of the proposal does not affect this right.

## **7. PROPOSAL PACKAGE CONTENTS**

### **7.1 Cover Letter**

One-page cover letter expressing interest in conducting multibeam bathymetric survey for the Port of Mulifanua Channel. Summarize company's experience, skill-set and resources that make it the ideal firm to complete the work.

### **7.2 Quotation Price List**

Complete quotation price sheet (Appendix A) contained in this RFQ

### **7.3 Proposal**

Narrative document that contains information about the proposer's firm, personnel, experience and all elements mentioned in the evaluation criteria listed below.

## **8. CRITERIA FOR EVALUATION**

### **8.1 Expertise, Experience and other qualifications (40 points)**

- a. Describe the firm's experience in conducting bathymetric surveys over the last five (5) years. Provide project details (e.g. scope, task, timeline, cost and report content). Include equipment, personnel involved and techniques.
- b. Provide three (3) client references for bathymetric survey work completed over the last five (5) years. Include name, title, and contact information for each reference.

### **8.2 Methodology – Approach (30 points)**

- a. What quality control measures will be employed to ensure collection and utilization of accurate data readings?
- b. Who will perform the Survey and what qualifications does this person (s) have that make them ideally suited to perform the task necessary?

### **8.3 Proposal Quoted Price (30 points)**

- a. Proposal with the lowest prices in total will receive the most points in this category as long as it is reasonable relative to the work to be performed.



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9. APPENDIX A: PRICE SHEET

**Samoa Shipping Corporation Limited**  
**Multibeam Bathymetric Survey 2019**

**Proposed Date:** \_\_\_\_\_ **Price Submitted by:** \_\_\_\_\_

Pursuant to and in compliance with SSC's Request for Quotations documents, the undersigned hereby proposes to complete the **Multibeam Bathymetric Survey Project** described herein and as specified on this price sheet. The quotation provided includes all costs associated with the completion of the work required.

Total Price for the **Multibeam Bathymetric Survey:** \$ \_\_\_\_\_

<b>Name</b>	<b>Title</b>
<b>Company Name &amp; Mailing Address</b>	<b>Telephone:</b>  <b>Fax:</b>  <b>Email:</b>
<b>Signature</b>	

## 10. APPENDIX B: SURVEY AREA





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## **11. APPENDIX C: REQUIREMENTS**

### **11.1 Requirements**

**11.1.1** Mobilization of a survey vessel capable of acquiring deep-water multibeam swath bathymetry according to IHO Special Order in the designated area.

**11.1.2** Provision of a hull mounted shallow-water multibeam system(s) and topside electronics aboard the survey vessel. The multibeam system shall collect full-coverage bathymetry and backscatter and be optimized to work in depths between 2 and 100 meters. The multibeam package shall include:

- RTK GPS Positioning System
- vessel motion sensing system.
- capability to collect and process data needed for water column speed of sound and refraction corrections. Capability to collect and process on-line sound speed corrections collected at transmit point.
- the ability to process data underway and produce onboard plots suitable for real-time quality control

### **11.2 Survey specifications**

**11.2.1** The multibeam sonar will have an effective beam width of no greater than 2 degrees in both the along-track and cross-track directions.

- Acoustic performance needs to be from 200 Khz to 400 Khz.
- The transmission rate must be  $\geq 40$  Hz.
- The data resolution must be less than 15 mm.
- The transducer must not weigh more than 15 kg.
- Swath width must be selectable in real time.

**11.2.2** Depth errors (at the 95% confidence level) will be less than 1% of the observed water depth. The Contractor will document the procedures used to assure that data meets these specifications.

**11.2.3** Prior to commencing operations, the Contractor shall conduct system accuracy tests to quantify the accuracy, precision and alignment of the multibeam sonar system in water depths and conditions equivalent to those found in the survey area. Testing shall include determination of residual biases in roll, pitch, heading and navigation timing error and transducer draft.

**11.2.4** Coordinated Universal Time (UTC) shall be used for all times recorded.

**11.2.5** The sound speed profile in the survey areas must be measured and monitored at sufficient frequency and to an appropriate depth to assure that the bathymetric data provided meets the required depth accuracy specification. The sound speed profile should be determined with a calibrated system capable of measuring the speed of sound with errors no greater than 2 m/sec (at the 95% confidence level). A calibrated sound speed measuring system capable of measuring the sound-speed profile to at least 95% of the deepest anticipated depth in the survey area must be available, though collection of sound speed data to 95% of the full depth of the survey area shall only be required at beginning and end of the surveys. The on-line sound speed collected at transmit point shall be merged on time basis with the sound speed profile.



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**11.2.6** The draft, settlement and squat of the vessel will be measured, monitored, applied, and recorded with sufficient frequency to ensure that the bathymetric data provided meets the required depth accuracy specification;8.2.7 Horizontal positioning of the vessel, as determined via differential GPS, should be accurate to within 2 meters (at 95% confidence) during all surveying. An integrated DGPS/motion sensor solution should be offered to help mitigate navigational problems arising from intermittent transmission of DGPS corrections. All positioning shall be referenced to the WGS84 Datum. The Contractor must demonstrate the accuracy prior to the survey.



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**12 Appendix D: IHO Standards**