

House District Statewide
Senate District Statewide

THE TWENTY-SEVENTH LEGISLATURE
APPLICATION FOR GRANTS AND SUBSIDIES
CHAPTER 42F, HAWAII REVISED STATUTES

Log No:

For Legislature's Use Only

Type of Grant or Subsidy Request:

GRANT REQUEST – OPERATING

GRANT REQUEST – CAPITAL

SUBSIDY REQUEST

"Grant" means an award of state funds by the legislature, by an appropriation to a specified recipient, to support the activities of the recipient and permit the community to benefit from those activities.

"Subsidy" means an award of state funds by the legislature, by an appropriation to a recipient specified in the appropriation, to reduce the costs incurred by the organization or individual in providing a service available to some or all members of the public.

"Recipient" means any organization or person receiving a grant or subsidy.

STATE DEPARTMENT OR AGENCY RELATED TO THIS REQUEST (LEAVE BLANK IF UNKNOWN): DLNR

STATE PROGRAM I.D. NO. (LEAVE BLANK IF UNKNOWN): _____

1. APPLICANT INFORMATION:

Legal Name of Requesting Organization or Individual:

Db/a: Ship Maintenance LLC

Street Address: Pier 41, Bldg. 6 Honolulu Harbor

Mailing Address: PO Box 29816, Honolulu, HI 96820

2. CONTACT PERSON FOR MATTERS INVOLVING THIS APPLICATION:

Name ANN CHUNG

Title Director of Special Projects

Phone # 808-351-6000

Fax # 808-523-7668

e-mail achung@navatekltd.com

3. TYPE OF BUSINESS ENTITY:

- NON PROFIT CORPORATION
 FOR PROFIT CORPORATION
 LIMITED LIABILITY COMPANY
 SOLE PROPRIETORSHIP/INDIVIDUAL

6. DESCRIPTIVE TITLE OF APPLICANT'S REQUEST:

Design a Search and Rescue (SAR) Unmanned Surface Vehicle (USV) to aid the State in the search and rescue operations in Hawaii's coastal regions, and mitigate risks for ocean safety personnel supporting these operations.

4. FEDERAL TAX ID #: _____

5. STATE TAX ID #: _____

7. AMOUNT OF STATE FUNDS REQUESTED:

FISCAL YEAR 2015: \$ \$299,327.28

8. STATUS OF SERVICE DESCRIBED IN THIS REQUEST:

- NEW SERVICE (PRESENTLY DOES NOT EXIST)
 EXISTING SERVICE (PRESENTLY IN OPERATION)

SPECIFY THE AMOUNT BY SOURCES OF FUNDS AVAILABLE AT THE TIME OF THIS REQUEST:

STATE \$ _____
FEDERAL \$ _____
COUNTY \$ _____
PRIVATE/OTHER \$ _____

TYPE NAME & TITLE OF AUTHORIZED REPRESENTATIVE:

AUTHORIZED SIGNATURE

Gary Johnson, Chief Executive Officer/Naval Architect

NAME & TITLE

1/30/2014
DATE SIGNED

Application for Grants and Subsidies

If any item is not applicable to the request, the applicant should enter "not applicable".

I. Background and Summary

This section shall clearly and concisely summarize and highlight the contents of the request in such a way as to provide the State Legislature with a broad understanding of the request. Include the following:

1. A brief description of the applicant's background

Ship Maintenance LLC (SM) was organized as an LLC in the State of Hawaii on October 6, 2006. SM's total employees and revenues range from 40 to 140 employees and \$4 to \$7 million in annual revenues, respectively. SM was in charge of managing the Navy's inactive fleet at Pearl Harbor, scheduling, performing maintenance work, and other services to maintain the combat readiness condition of the vessels.

SM's Chief Executive Officer, Gary Johnson, operates out of facilities at Pier 41 in Honolulu, HI. Future facilities and equipment will depend upon the needs for new contracts. SM uses its recent history of managing the Navy's inactive ships at Pearl Harbor as a reference for pursuing new contracts with the Federal and State government. Prior to Gary Johnson becoming CEO of SM, he was project manager for 3 Unmanned Surface Vehicle (USV) projects awarded to Navatek Ltd. During which, he oversaw the design, construction and delivery of five (5) USV's to various clients. SM's experience in complying with strict government contracts and USV design and construction make it the perfect candidate to complete the proposed Search and Rescue (SAR) USV.

2. The goals and objectives related to the request

- i. Develop the design for a lightweight (Jet Ski scale) SAR USV to aid in search and rescue operations in Hawaii's coastal regions. The SAR USV will be designed to gather and transmit real time data in hazardous conditions and relay the information back to search and rescue command centers.
- ii. Develop a craft that will help reduce the risks for search and rescue personnel and improve the effectiveness of search and rescue operations.
- iii. Provide the State with a contract level design package that will include the following deliverables:

- a. Vessel, Primary and Auxiliary Systems
 - 1. Hull Lines
 - 2. Hull Structure Design
 - 3. Propulsion Machinery Integration Details
 - 4. Mechanical System Design
 - 5. Electrical System Design
 - 6. Outfitting Specification
- b. Sensors
 - 1. Video and Still Cameras
 - 2. Sonar
 - 3. Radar
- c. Remote Control Systems
- d. Launch and Recovery System Design
- e. Storage Instructions
- f. Maintenance Guidelines

3. The public purpose and need to be served

Victims on the verge of drowning in Hawaii's coastal regions are often extremely difficult to locate and recover. Sometimes searches last for hours, days, or even weeks as families always have a strong desire to find their loved ones and gain closure whether the victims have survived or not. In some cases, extraordinary resources are allocated to these search and rescue operations including Ocean Safety, Coast Guard, Police, Fire Rescue and other personnel. All of the employees that work for these agencies put themselves at risk during these operations, and often significant costs are incurred by the State. Long extended searches are the most costly since they often utilize helicopters, land support, personal watercraft, and various boats and ships.

With improvements in the consumer availability and the performance of USVs, there is an opportunity to create an SAR USV that will improve the capabilities of search and rescue personnel during victim recovery operations. This SAR USV will have the ability to operate in Hawaii's rugged near shore environments. This vessel will help mitigate risks for ocean safety personnel by allowing them to observe dangerous predator infested rescue sites from the safety of an on-land or vessel-based command center. Once a victim is located, rescue personnel can be deployed to a known location, thus minimizing their time in harm's way.

Under this request SM proposes to design an SAR USV system that includes the vessel, sensors, remote control systems, maintenance recommendations, launch and recovery information, and storage instructions. This contract level design package will provide the State of Hawaii with 1) A comprehensive technical specification for an SAR USV that can be used to

procure fixed price proposals for single or multiple systems from a builder, and 2) Provide ocean safety agencies with the design of a new tool that will assist in search and rescue efforts, improve recovery and response time, and reduce the risks for rescue personnel.

4. Describe the target population to be served; and

The target population that will be served includes: State of Hawaii residents and tourists, and State agencies participating in near shore ocean rescues.

5. Describe the geographic coverage.

The geographic coverage includes all near shore coastal regions around the State of Hawaii.

II. Service Summary and Outcomes

The Service Summary shall include a detailed discussion of the applicant's approach to the request. The applicant shall clearly and concisely specify the results, outcomes, and measures of effectiveness from this request. The applicant shall:

1. Describe the scope of work, tasks and responsibilities

The scope of work, tasks and responsibilities include the development of the SAR USV vessel design: Hull design, structural design, propulsion integration, mechanical systems, electrical systems, outfitting, sensor design and integration, remote control systems, launch and recovery information, storage instructions and maintenance guidelines. This effort will also include estimating performance characteristics, producing a comprehensive technical specification, and managing the overall program.

a. Develop the SAR USV vessel design

SM will apply its extensive knowledge and experience in the design, development, construction, and testing of USV's to produce a new design for a light weight (Jet Ski scale) SAR USV. The vessel design will include hull design, propulsion integration, mechanical systems, electrical systems, outfitting, storage instructions and maintenance guidelines. SM will research similar ocean safety equipment and coordinate with State of Hawaii ocean safety personnel to develop a suitable design solution for this project. The City and County Ocean and Safety Agency has already provided some input into the vessel's design, and their specified performance characteristics will be invaluable in tightening the design spiral.

- The SAR USV must be small enough to be transported quickly and easily on land by a motor vehicle, or by ocean via an offshore parent craft.
- The vessel must be light weight to enable launch and recovery via man-powered rough terrain trailers.

b. Integrate sensors and remote control systems

SM will design a suitable suite of sensors and remote control systems that enable rescue personnel to efficiently control the vessel and transmit key data back to a command center. The sensors will include video cameras, still cameras, sonar systems, and radar. The remote control system will be capable of operating the vessel from a land-based command center or an offshore parent craft. The remote control system will be designed with long range connectivity in order to enable operation in remote locations, far from command centers. Commercial available off the shelf (COTS) components

and subsystems will be integrated into the design wherever possible in order to reduce cost, and improve reliability and maintainability.

c. Estimate performance characteristics

SM will estimate and analyze the performance characteristics of the SAR USV throughout the design process. These characteristics will include speed, vessel trim, operating range, power consumption, stability, and payload capacity. SM will also utilize its sister company, Navatek Ltd., to further analyze the vessel's motions. Navatek will utilize its proprietary computational fluid dynamics software to study lift, drag, flow visualization, and free surface effects over the entire operating envelope. The motions of the craft will be important in developing an understanding of how the SAR USV will perform in offshore environments.

d. Develop transportation systems and the launch and recovery system

The SAR USV must be easily transported and launched in order to respond quickly to coastal emergencies around Hawaii's shorelines. The SAR USV must be transportable on land via van or truck on a trailer. It also must be capable of ocean transport on a larger boat or ship. Further research and coordination with the State's ocean safety agencies will provide insight and help SM design the best possible transportation solutions. In coordination with the transportation system design, SM will also develop launch and recovery systems. These systems must allow for ocean safety personnel to quickly launch and retrieve the SAR USV from land or another vessel in a wide range of environments and conditions.

e. Deliver the comprehensive technical specification to the State of Hawaii

SM will document all stages of the design process in order to create a final design package that will be provided to the State. The technical specification will have sufficient definition for builders to provide firm fixed price proposals for single or multiple systems.

f. Program Management

SM shall maintain the overall program management, which includes technical guidance, background research, design schedule, design review, documentation package production, contract support, and other programmatic.

2. Provide a projected annual timeline for accomplishing the results or outcomes of the service;

Task	Description	Months After Award											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Vessel Design	█	█	█									
2	Sensor & Remote Control System Integration				█	█	█						
3	Performance Estimates							█	█				
4	Transportation and Launch & Recovery System Design									█	█		
5	Develop Technical Specification and Finalize Design Package											█	█
6	Program Management	█	█	█	█	█	█	█	█	█	█	█	█

3. Describe its quality assurance and evaluation plans for the request. Specify how the applicant plans to monitor, evaluate, and improve their results; and

SM’s recent history of managing the Navy’s inactive ships at Pearl Harbor provides relevant marine project management experience for the SAR USV project. SM will apply the lessons learned from scheduling and organizing vessel maintenance of the Navy’s inactive fleet, to add value to the SAR USV design process. CEO, Gary Johnson has extensive experience in USV vessel design and construction processes from his years as a project manager for Navatek Ltd. Navatek Ltd. has designed, manufactured and delivered two (2) USV’s to the US Navy and three (3) to ST electronics (Singapore). The processes and procedures necessary to execute these complex projects have already been established and will allow SM to effectively navigate through the proposed SAR USV design project.

SM will adhere to an appropriate naval architecture design spiral in order to provide the State of Hawaii with a complete SAR USV design package. Gary Johnson will serve as program manager and principal designer. The following design steps/spiral will be used to monitor the progress of the project and evaluate the design of the SAR USV throughout the entire design process.

- i. Mission: What are the operational goals for the SAR USV? What are the crafts transportation requirements, performance goals, and operating envelope?

- ii. Initial Design Outline: Develop a brief outline and summary for the overall system design.
- iii. Design Review: SM personnel will review the initial design internally and in coordination with State of Hawaii ocean safety personnel.
- iv. Detail Design: SM will create the contract level design package for the State of Hawaii, incorporating all the information derived from the preceding steps.
- v. Project Review: SM will review the first draft of the contract design and present it to various ocean safety agencies to obtain feedback.
- vi. Produce a Comprehensive Technical Specification: SM will incorporate all the feedback received from the previous steps to produce the final, SAR USV technical specification.

4. List the measure(s) of effectiveness that will be reported to the State agency through which grant funds are appropriated (the expending agency). The measure(s) will provide a standard and objective way for the State to assess the program's achievement or accomplishment. Please note that if the level of appropriation differs from the amount included in this application that the measure(s) of effectiveness will need to be updated and transmitted to the expending agency.

The technical specification will be provided to the Honolulu Fire Department, the DLNR, the City and County Ocean Safety Agency and other search and rescue agencies of interest. The design package will include:

- SAR USV Principal Characteristics
- Contract level design drawings
- Remote control system design
- Vessel performance estimates
- Launch and recovery system design
- Storage instructions
- Maintenance guidelines
- Contract level material take-off and COTS component selections

This project can be considered effective if it provides the State of Hawaii with:

- 1) A contract level design package, or technical specification, with sufficient definition for builders to provide firm fixed price proposals for single or multiple systems.
- 2) Design analysis and performance estimates that provide operational capabilities and envelopes for the SAR USV including: Response time, range, and coverage per unit time.

III. Financial

Budget

1. The applicant shall submit a budget utilizing the enclosed budget forms as applicable, to detail the cost of the request.

Please see attached completed budget forms following this section.

2. The applicant shall provide its anticipated quarterly funding requests for the fiscal year 2015.

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total Grant
\$69,016.88	\$99,302.40	\$82,403.20	\$48,604.80	\$299,327.28

3. The applicant shall provide a listing of all other sources of funding that they are seeking for fiscal year 2015.

None.

4. The applicant shall provide a listing of all state and federal tax credits it has been granted within the prior three years. Additionally, the applicant shall provide a listing of all state and federal tax credits they have applied for or anticipate applying for pertaining to any capital project, if applicable.

None.

5. The applicant shall provide the balance of its unrestricted current assets as of December 31, 2013.

Balance of Unrestricted Current Assets as of December 31, 2013
\$50,000.00

BUDGET REQUEST BY SOURCE OF FUNDS

(Period: July 1, 2014 to June 30, 2015)

Applicant: Ship Maintenance, LLC (SM)

BUDGET CATEGORIES	Total State Funds Requested (a)	(b)	(c)	(d)
A. PERSONNEL COST				
1. Salaries	84,528			
2. Payroll Taxes & Assessments	69,549			
3. Fringe Benefits	20,250			
TOTAL PERSONNEL COST	174,327			
B. OTHER CURRENT EXPENSES				
1. Airfare, Inter-Island				
2. Insurance				
3. Lease/Rental of Equipment				
4. Lease/Rental of Space				
5. Staff Training				
6. Supplies				
7. Telecommunication				
8. Utilities				
9. Performance Estimate Services	50,000			
10. Remote Control Design Services	75,000			
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
TOTAL OTHER CURRENT EXPENSES	125,000			
C. EQUIPMENT PURCHASES				
D. MOTOR VEHICLE PURCHASES				
E. CAPITAL				
TOTAL (A+B+C+D+E)	299,327			
SOURCES OF FUNDING		Budget Prepared By:		
(a) Total State Funds Requested	299,327	Gary Johnson 808-291-1986		
(b)		Name (Please type or print) Phone		
(c)		1/30/14		
(d)		Signature of Authorized Official Date		
TOTAL BUDGET	299,327	Gary Johnson, Chief Executive Officer/Naval Architect Name and Title (Please type or print)		

**BUDGET JUSTIFICATION
PERSONNEL - SALARIES AND WAGES**

Applicant: Ship Maintenance, LLC

Period: July 1, 2014 to June 30, 2015

POSITION TITLE	FULL TIME EQUIVALENT	ANNUAL SALARY A	% OF TIME ALLOCATED TO GRANT REQUEST B	TOTAL STATE FUNDS REQUESTED (A x B)
Chief Executive Officer/Naval Architect		\$130,000.00	62.46%	\$ 81,200.00
Assistant Controller		\$66,560.00	5.00%	\$ 3,328.00
				\$ -
				\$ -
				\$ -
TOTAL:				84,528.00

JUSTIFICATION/COMMENTS: The CEO and Naval Architect will serve as the project manager and lead designer for this project. The Assitant Controller will assist with program management and accounting.

BUDGET JUSTIFICATION - EQUIPMENT AND MOTOR VEHICLES

Applicant: Ship Maintenance, LLC

Period: July 1, 2014 to June 30, 2015

DESCRIPTION EQUIPMENT	NO. OF ITEMS	COST PER ITEM	TOTAL COST		TOTAL BUDGETED
			\$ -		
			\$ -		
			\$ -		
			\$ -		
			\$ -		
TOTAL:					
JUSTIFICATION/COMMENTS:					

DESCRIPTION OF MOTOR VEHICLE	NO. OF VEHICLES	COST PER VEHICLE	TOTAL COST	NO. OF DAYS UTILIZED	TOTAL BUDGETED
			\$ -		
TOTAL:					
JUSTIFICATION/COMMENTS:					

**BUDGET JUSTIFICATION
CAPITAL PROJECT DETAILS**

Applicant: Ship Maintenance, LLC

Period: July 1, 2014 to June 30, 2015

FUNDING AMOUNT REQUESTED						
TOTAL PROJECT COST	ALL SOURCES OF FUNDS RECEIVED IN PRIOR YEARS		STATE FUNDS REQUESTED	OF FUNDS REQUESTED	FUNDING REQUIRED IN SUCCEEDING YEARS	
	FY: 2012-2013	FY: 2013-2014	FY:2014-2015	FY:2014-2015	FY:2015-2016	FY:2016-2017
PLANS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LAND ACQUISITION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
DESIGN	\$ -	\$ -	\$299,327.28	\$ -	\$ -	\$ -
CONSTRUCTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
EQUIPMENT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
JUSTIFICATION/COMMENTS: The design funding requested for 2014-2015 is per this Grants in Aid Application.						

**DECLARATION STATEMENT OF
APPLICANTS FOR GRANTS AND SUBSIDIES PURSUANT TO
CHAPTER 42F, HAWAI'I REVISED STATUTES**

The undersigned authorized representative of the applicant certifies the following:

- 1) The applicant meets and will comply with all of the following standards for the award of grants and subsidies pursuant to Section 42F-103, Hawai'i Revised Statutes:
 - a) Is licensed or accredited, in accordance with federal, state, or county statutes, rules, or ordinances, to conduct the activities or provide the services for which a grant or subsidy is awarded;
 - b) Complies with all applicable federal and state laws prohibiting discrimination against any person on the basis of race, color, national origin, religion, creed, sex, age, sexual orientation, or disability;
 - c) Agrees not to use state funds for entertainment or lobbying activities; and
 - d) Allows the state agency to which funds for the grant or subsidy were appropriated for expenditure, legislative committees and their staff, and the auditor full access to their records, reports, files, and other related documents and information for purposes of monitoring, measuring the effectiveness, and ensuring the proper expenditure of the grant or subsidy.
- 2) The applicant meets the following requirements pursuant to Section 42F-103, Hawai'i Revised Statutes:
 - a) Is incorporated under the laws of the State; and
 - b) Has bylaws or policies that describe the manner in which the activities or services for which a grant or subsidy is awarded shall be conducted or provided.
- 3) If the applicant is a non-profit organization, it meets the following requirements pursuant to Section 42F-103, Hawai'i Revised Statutes:
 - a) Is determined and designated to be a non-profit organization by the Internal Revenue Service; and
 - b) Has a governing board whose members have no material conflict of interest and serve without compensation.

Pursuant to Section 42F-103, Hawai'i Revised Statutes, for grants or subsidies used for the acquisition of land, when the organization discontinues the activities or services on the land acquired for which the grant or subsidy was awarded and disposes of the land in fee simple or by lease, the organization shall negotiate with the expending agency for a lump sum or installment repayment to the State of the amount of the grant or subsidy used for the acquisition of the land.

Further, the undersigned authorized representative certifies that this statement is true and correct to the best of the applicant's knowledge.

Ship Maintenance LLC

(Typed Name of Individual or Organization)

(Signature)

Gary Johnson
(Typed Name)

1/30/2014

(Date)

Chief Executive Officer/Naval Architect
(Title)

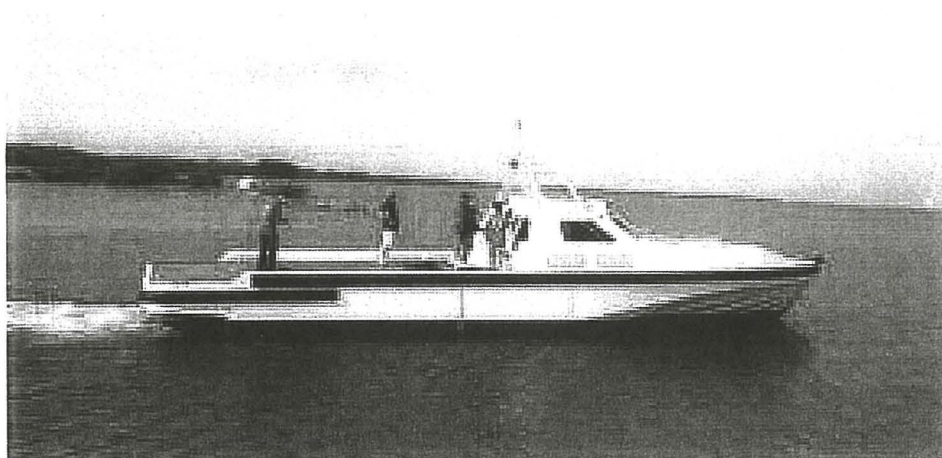
IV. Experience and Capability

A. Necessary Skills and Experience

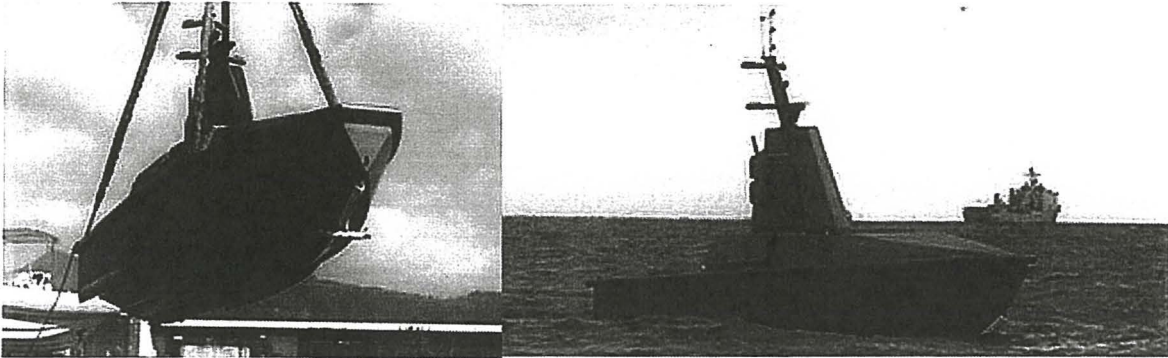
The applicant shall demonstrate that it has the necessary skills, abilities, knowledge of, and experience relating to the request. State your experience and appropriateness for providing the service proposed in this application. The applicant shall also provide a listing of verifiable experience of related projects or contracts for the most recent three years that are pertinent to the request.

SM utilizes the skills and abilities obtained during its Navy vessel maintenance contract and its knowledge of complex USV designs. SM has experience in detailed scheduling, project oversight and vessel maintenance. SM received the highest possible government scores for satisfaction after completing the contract term in 2012. In addition to these skills, SM will apply CEO Gary Johnson's knowledge of USV design. The following projects managed by Gary Johnson relate directly to the proposed SAR USV.

- **ETM53 USV:** Navatek Ltd. delivered a 25LT USV delivered to ST Electronic in Singapore. Gary Johnson coordinated all project activity including design liaison, construction coordination at two separate CONUS locations, and all T&E.



- **Two 9M USV's:** Navatek Ltd. successfully delivered both vessels to ST Electronic in Singapore. Gary Johnson handled all aspects of the project including design, construction supervision, vessel trials and customer interfacing.



- **USV hull zero Ceros Project:** Gary Johnson was in charge of adding modular auxiliary propulsion to 11m USV. He developed the design, provided a full engineering design package, and assisted with construction oversight and the testing program.



Please see attached specification sheets of each vessel following this section:

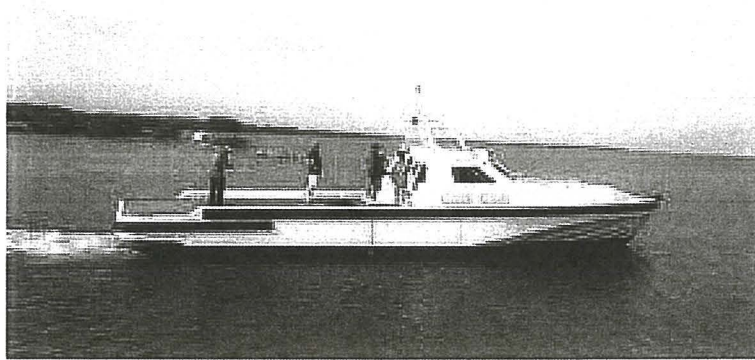
B. Facilities

The applicant shall provide a description of its facilities and demonstrate its adequacy in relation to the request. If facilities are not presently available, describe plans to secure facilities. The applicant shall also describe how the facilities meet ADA requirements, as applicable.

SM CEO, Gary Johnson operates out of offices at Pier 41, Honolulu, Hawaii.

ETM[®] 53' Waterjet USV

For ST Electronics (Singapore)



GENERAL DIMENSIONS:

Length Overall 16.15m
Beam Overall 5.13m
Draft to keel laden 1.0 m
Draft to keel light.....0.71m
Fuel capacity.....9000 litres

MAIN ENGINES (other V-configuration engines optional)

Number of Engines.....2
Engine Type..... Caterpillar C-18 ACERT (inline 6)
Power.....2X1150 hp (847 Kw)
Gear box ZF 500
Propulser Type.....Rolls Royce A36 Waterjet

DESIGN SPEED

Maximum.....52.5 kts
Cruise (22390 kg, half fuel).....35 kts

ENDURANCE.....44.5 hours/1246 NM

DISPLACEMENT:

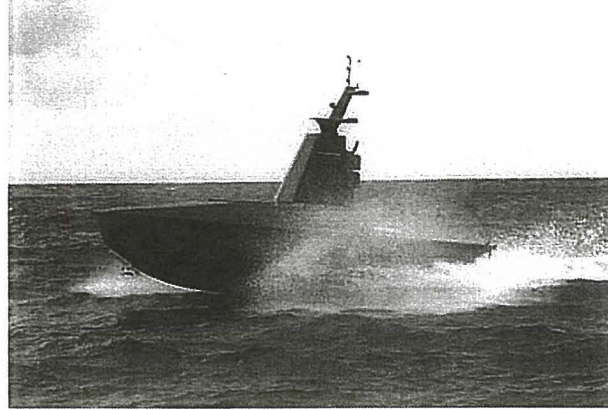
Full Load Displacement.....26,000 kg
Light ship.....13,200 kg

ETM[®] SAM 30 USV

9m Unmanned Surface Vessel

Entrapment Tunnel Monohull (ETM[®])

Stable Anti-slamming Monohull (SAM)



PERFORMANCE:

480 hp Diesel	35 Kts
370 hp Diesel	32 Kts
Range at Cruise	250 Nautical Miles

GENERAL DIMENSIONS:

Length Overall	29' 6" (9.0 m)
Beam Overall	9' 2" (2.8 m)
Draft (Water Jet–Stern Drive)	2' 4"–3' 7" (0.7–1.1 m)
Displacement at Light Ship	7,700 lbs (3,500 kg)
Displacement at Full Load	12,125 lbs (5,500 kg)

CONSTRUCTION:

Hull	Composite: FR Epoxy, E-glass, Foam Core, Carbon Fiber Reinforcing
Deck	Composite: FR Epoxy, E-glass, Foam Core, Carbon Fiber Reinforcing

PROPULSION AND AUXILIARIES:

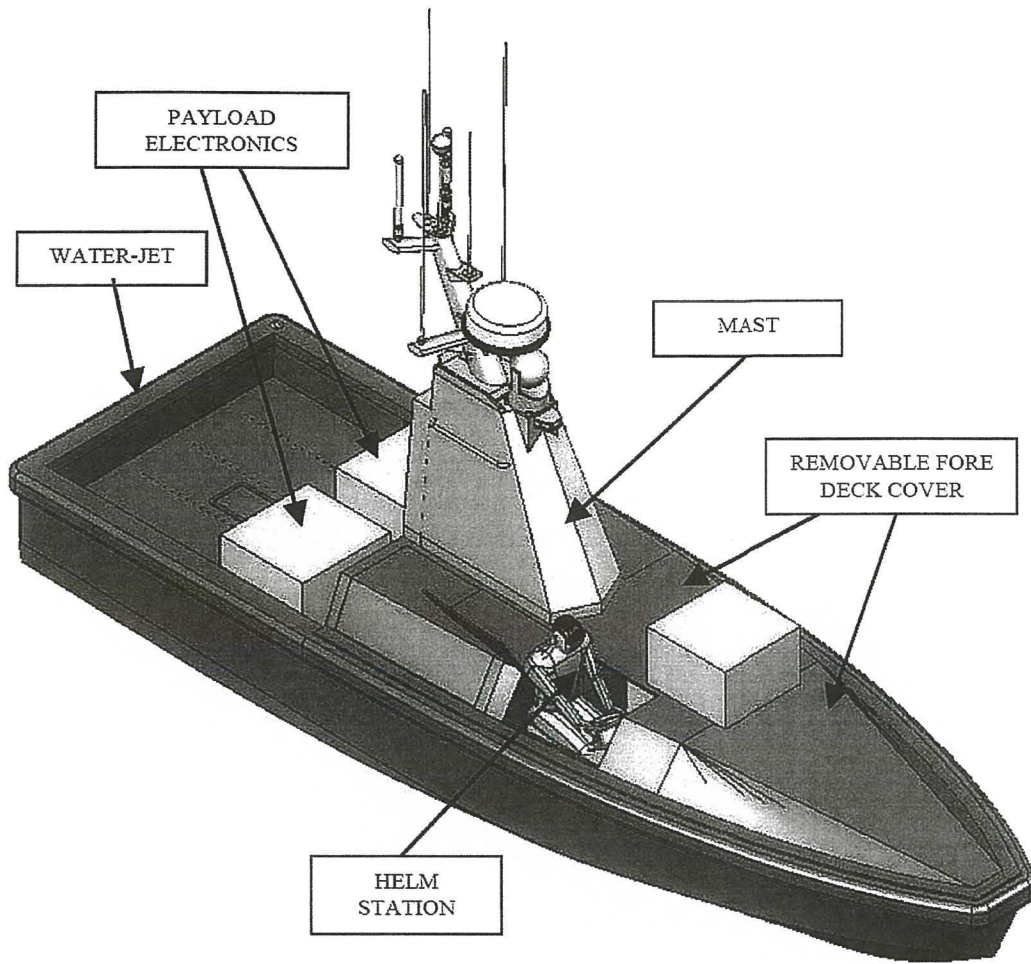
Main engines and Drives	
Main Engine Option #1	Yanmar 6LY3-ETP 480hp
Water Jet Option #1	Hamilton HJ292 Waterjet
Main Engine Option #2	Volvo D3-370
Stern Drive Option #2	Volvo DPH Duo-Prop

TANK CAPACITY:

Fuel	(Fwd: 180, Aft: 160) Total: 340 Gallons (1,280 Liters)
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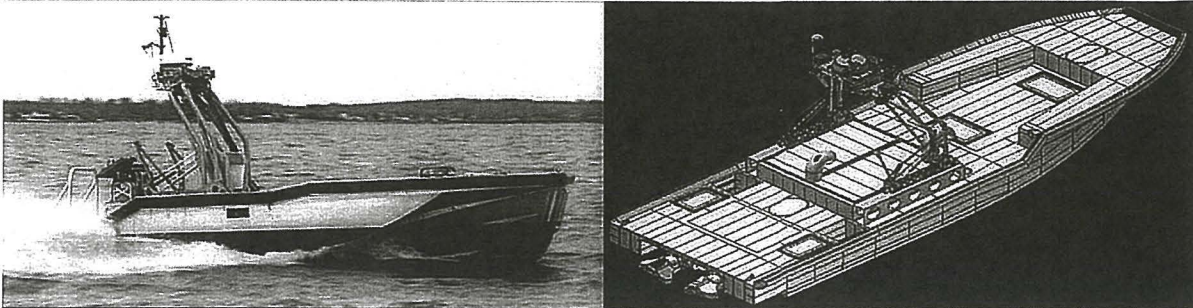
SYSTEMS:

Electrical	12V DC, 24V DC, 110V AC, 220V AC
Steering	Hydraulic
Electronics	Commercial Marine Stand-Alone Components
.....	Other Customer Supplied Electronics and Related Control System



SLED 36' USV

11m UNMANNED SURFACE VESSEL (USV)



USV HM&E Platform During Unmanned Testing

Primary Use Unmanned Surface Vessel for U.S. Navy

PERFORMANCE:

Speed Maximum 36 kts
 Cruise Speed 20-30 kts
 Range at Cruise 400 Nautical Miles

GENERAL DIMENSIONS:

Length Overall 36' 11" (11.4 m)
 Beam Overall 11' 2" (3.40 m)
 Draft (Full Load) 2' 10" (0.85 m)
 Displacement at Light Ship 15,650 lbs (7100 kg)
 Displacement at Full Load 22,600 lbs (11,000 kg)

CONSTRUCTION:

Material hull and deck 5083 H116 Aluminum

PROPULSION AND AUXILIARIES:

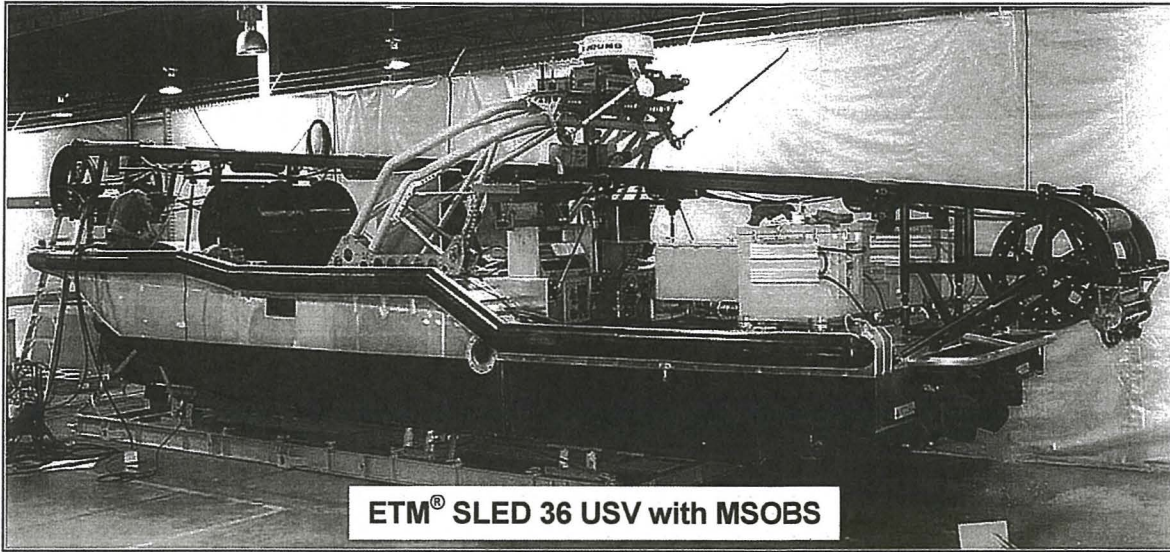
Main engines x 2 440 hp Yanmar 6LY3-STP
 Gear boxes ZF 280-1 Ratio = 1.214:1
 Waterjets Rolls-Royce FF310

TANK CAPACITIES:

Fuel (Fwd: 300, Aft: 220) Total: 520 U.S. Gallons (1950 Liters)

SYSTEMS:

Electrical 12V DC, 24V DC
 Stabilizing Trim Tabs w/ Hydraulic Control Integrated with Waterjets
 Steering Hydraulic
 Electronics Per ISR System Requirements



ETM[®] SLED 36 USV with MSOBS

US Patent No.: US 7,418,915 B2

(12) United States Patent
Campbell

(16) Patent No.: US 7,418,915 B2
(15) Date of Patent: Sep. 2, 2008

(54) ENTRAPMENT FUNNEL MONITORING
OPTIMIZED WATERLINE AND LIGHT
PAYLOAD

INTERNATIONAL PATENT CLASSIFICATION

(73) Inventor: Lorne Frederick Campbell, Ames
(31B)

(57B) Class: G01S 7/48

(75) Assignee: Navtech, Ltd., Houston, TX (US)

(57C) Name: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No. 11/724,872

(22) Filed: Mar. 15, 2007

(55) Prior Publication Data

US 2007/015029 A1 Sep. 20, 2007

(56) Related U.S. Application Data

(30) Provisional application No. 60/782,276, filed on Mar.
15, 2006.

(51) Int. Cl. H01G 1/02 (2006.01)

(52) U.S. Cl. 114/209; 114/208

(53) Field of Classification Search: H01G 1/02;
114/209; 202; 204; 112

See application file for complete search history.

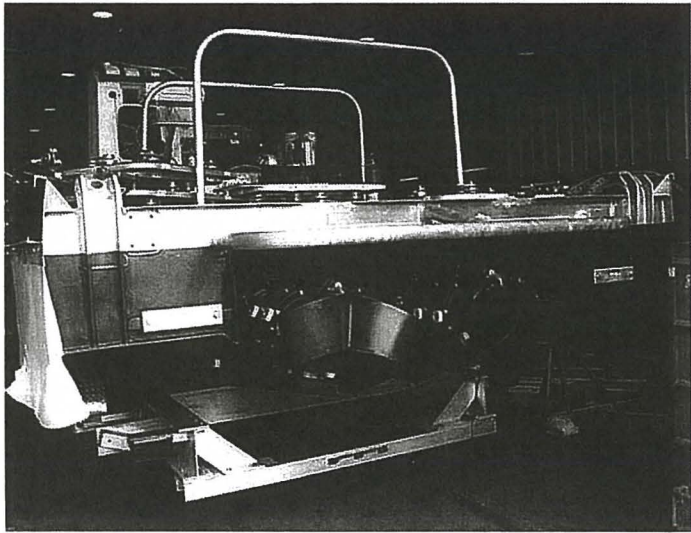
(56) References Cited

U.S. PATENT DOCUMENTS

1,29,879	A	7,260	April	114/6.8
1,563,660	A	11,229	March	114/6.8
1,636,811	A	7,129	October	114/6.8
2,127,792	A	11,245	May 2004	114/6.8
2,717,912	A	2,196	June	114/6.8
2,801,016	A	4,161	January	114/6.8
3,483,017	A	8,168	January	114/6.8
4,231,100	A	8,167	June	114/6.8

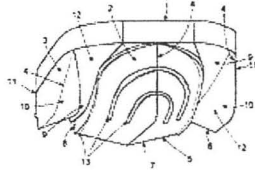
(57) Abstract

An entrapped vessel waterline vessel having three hulls
of varying functional hull forms arranged outward of the
main hull with the keels of the three hulls being parallel. The
main hull is a narrow, shallow hull with variable cross-section
decreasing aftward. The hulls have very fine bows and narrow,
asymmetric, deep V hulls, with nearly vertical sideboards
board sides above their keels and a variable reverse flare on
their aftward sides with the reverse flare angles decreasing
from bow to stern. The hulls on each side of the main
hull are formed by three distinct surfaces, the sides of the
main hull above its keel, the reverse flare on its board sides
of each into up and over their keels and a cooling surface
transversely spanning the advanced end sides and having
forwardly, transverse, downward and rearwardly decreasing
width. The raised entrapment slopes down from the bow to a
section of flat deck where the cooling height above the hull
remains essentially constant. As speed the craft generates
substantial mass waterline pressure, thereby reducing the
forward water height of the entrapped vessel and the
open of the cooling is approximately at the craft's transverse
waterline. As a result the waterline vessel has improved
stability, stability and weight carrying ability.



(57) Abstract

444 Issues, 7 Drawing Sheets



V. Personnel: Project Organization and Staffing

A. Proposed Staffing, Staff Qualifications, Supervision and Training

The applicant shall describe the proposed staffing pattern and proposed service capacity appropriate for the viability of the request. The applicant shall provide the qualifications and experience of personnel for the request and shall describe its ability to supervise, train and provide administrative direction relative to the request.

The staffing will be allocated over the term of the project consistent with the scope of work and the tasks. All stages in the project including – craft development, equipment incorporation, performance testing, transportation development, and design package production will be completed primarily by Gary Johnson.

Please see the attached resume for the qualifications and experience for this request.

B. Organization Chart

The applicant shall illustrate the position of each staff and line of responsibility/supervision. If the request is part of a large, multi-purpose organization, include an organizational chart that illustrates the placement of this request.

Since only two employees are proposed to work under this project, no organization chart is necessary. Gary Johnson is the Chief Executive Officer, and Leilani Sebastian-Dimaya is the Assistant Controller. She will report directly to Gary Johnson.

C. Compensation

The applicant shall provide the annual salaries paid by the applicant to the three highest paid officers, directors, or employees of the organization by position.

Highest Paid Personnel	Annual Salary
[REDACTED]	\$130,000.00
[REDACTED]	\$65,560.00

GARY KAHALEWAI JOHNSON



EDUCATION:

- University of Southampton**, United Kingdom
Master of Science with Distinction, Naval Architecture, September 2011
- University of California at Santa Barbara**, Santa Barbara, CA 93106
Bachelor of Science, Mechanical Engineering, September 2006
- University of Hawaii**, Honolulu, HI 96822
Completed five credit hours in Undergraduate studies
Major: Mechanical Engineering, summer 2005
- Punahou High School**, Honolulu, HI 96822-Diploma, 2002

WORK EXPERIENCE:

- Chief Executive Officer, Ship Maintenance, LLC**
Ship Maintenance, LLC
841 Bishop Street, Suite 1110, Honolulu, HI 96813
January 2014-Present
- General Manager, Navatek Boat Builders, LLC**
Navatek Boat Builders, LLC
841 Bishop Street, Suite 1110, Honolulu, HI 96813
Dec 2012-Dec 2013
- General Manager, Applied Engineering Division**
Navatek, Ltd.
841 Bishop Street, Suite 1110, Honolulu, HI 96813
March 2010-Dec 2013
- Senior Project Engineer, Applied Engineering Division**
Navatek, Ltd.
841 Bishop Street, Suite 1110, Honolulu, HI 96813
Dec 2006- March 2010

Duties, Responsibilities and Accomplishments:

- Project Management and Engineering Design
 - Ultra Heavy-Lift Amphibious Craft (UHAC)
 - Coordinated all project activity including design liaison, construction coordination, test and evaluation, maintenance and craft alterations.
 - Carbon fiber LCAP design and construction feasibility.
 - CAC assembly process development
 - Construction Design, Construction Supervision, Test Director
 - Sea Blade Product Line Development
 - Managed the construction and design effort involved with developing a full product line of uniquely designed craft between 16' and 36'.
 - Aluminum and FRP versions were developed for all of the models in the line.
 - To date the FRP versions built are the SB-16 and the SB-30. The Aluminum versions built are the SB-17, SB-19, SB-22, SB-24, and SB-25.
 - Stable Anti-Slamming Monohull Commercial Tourboat
 - Design and construction supervision for three 39' tourboats delivered to customers in the Hawaii market.
 - These vessels all successfully obtained USCG COI's for 33 passengers.
 - The vessels were delivered in 2010, 2011, and 2012.
 - 16m USV
 - Coordinated all project activity including design liaison, construction coordination at two separate CONUS locations and all T&E.
 - Construction Design, Construction Supervision, Test Director
 - Vessel Delivered to ST Electronics, Singapore, February 2012
 - 9M USV 1: Unmanned Surface Vessel Principal Engineer
 - Construction Design, Construction Supervision, Test Director
 - Vessel Delivered to ST Electronics, Singapore, January 2009
 - 9M USV 2: Unmanned Surface Vessel Principal Engineer
 - Construction Design, Construction Supervision, Test Director
 - Vessel Delivered to ST Electronics, Singapore, December 2009
 - Navatek 11m Sea Blade Hull Form Development
 - Test Director

- Designer for second generation military craft
- Contributor
 - Combatant Craft Medium Proposal
 - Test Data: Motions, Accelerations, Speed-Power
 - Performance Predictions
 - Stability Analysis
 - Structural Design
 - Propulsion Integration
- 11M USV Auxiliary Propulsion
 - Principal Designer
 - Test Director
- TLB-CAT
 - 45' Tandem Lifting Body composite catamaran
 - Initial FRP construction
 - Aft Lifting Body Installation
 - Hydraulic Interceptor Design
 - Diesel Engine Installation and Commissioning
- Construction Supervision
 - BLB-70 Bow Lifting Body Aluminum structure construction
 - Seacraft Hull II Retrofit
 - Integrated Propulsion Pod and Aft Lifting Body Installation on the Aronow 40
 - Seacraft Hull I interceptor installation
 - Seaflyer Demobilization
- Maintenance
 - Manage Maintenance of Twenty-Five Vessels between 15' and 150'

Volunteer, National Fish and Wildlife Service

Midway Atoll National Wildlife Refuge

Supervisors:

Dan Forney, Regional Environmental Compliance Coordinator (503)231-6143

Tim Bodeen, Refuge Manager (360)887-4106

John Klavitter, Wildlife Biologist (808)674-8237

June 2004-August 2004

Duties and Responsibilities:

- Environmental Engineer/Survey Assistant: Assisted consultants in various survey projects including pump placement for the removal of the previously spilled fuel, and the movement of a drainage pipe due to sand migration.

- Project Manager: Managed an extensive fuel remediation system. Monitored pumps and supervised personnel in the removal of spilled fuel from the surface of the ground water.
- Incinerator Maintenance and Repair: Maintained and operated incinerator used to burn both trash and spilled fuel.
- Boat, Ship, and Engine Maintenance: Maintained a variety of boats and engines including two open ocean tug boats, a landing craft, and a variety of small runabouts with four-stroke outboard engines.

Deckhand

Mazel Tov Sportfishing
Slip J, Kewalo Basin, Honolulu, HI 96814
June 2003-August 2003

Duties and Responsibilities:

- Maintenance: Maintained boat surfaces, engines, and all fishing gear.
- Customer Care: Informed customers about the location of safety equipment and the procedures to follow in the event of an emergency.

Maintenance Assistant, Intern

Navatek, Ltd.
841 Bishop Street, Suite 1110, Honolulu, HI 96813
July 2002-September 2002

Duties and Responsibilities:

- Construction: Assisted in the remodeling of a Navatek office at the shipyard.
- Maintenance: Scrubbed ship's hulls and cleaned interiors and exteriors of ships in preparation for renovation.
- Ship Construction: Removed hydraulic lines from the Surface Effects Ship, and assisted in the receiving of two new engines for the ship.

TRAINING:

Experienced in Computer Aided Design and Data Processing

Proficiency in multiple CAD programs including Solidworks, ProEngineer, MastercamX, Multisurf, Rhino, and AutoCAD. Experience with data processing and spreadsheet software including Excel, Matlab, Mathematica, Cambridge Engineering Selector (CES) material selection, ALGOR, and ABAQUS finite element analysis. Stability Analysis experience using GHS, Multisurf, and Rhino.

DISSERTATIONS AND PUBLICATIONS:

Master of Science Dissertation, University of Southampton

- Validation of the Ultra Deep-V (UDV) Hull Form

Technical Operator's Manuals

- 9M USV Hulls 1 and 2
- 16M USV

Design Reports for Government Contracts

- CEROS Flow Interrupter Research Program
- 11M USV Auxiliary Propulsion Research Program
- Combatant Craft Medium Proposal
 - Stability Section
 - Testing Section
 - Structural Section

COMMUNITY OR VOLUNTEER SERVICES:

Volunteer Engineering Mentor, Kapolei High School, First Robotics Competition
2007-2008

Volunteer Volleyball Coach, Le Jardin Academy
Intermediate 2003
Junior Varsity 2004, 2005, 2009
Varsity 2006, 2007

Volunteer, Institute for Human Services (IHS)
January 2002-June 2002

Volunteer Teacher's Assistant, Maunawili School
September 2001-December 2001

VI. Other

A. Litigation

The applicant shall disclose any pending litigation to which they are a party, including the disclosure of any outstanding judgement. If applicable, please explain.

None.

B. Licensure or Accreditation

The applicant shall specify any special qualifications, including but not limited to licensure or accreditation that applicant possesses relevant to this request.

See Gary Johnson's resume for applicable accreditation information.