



Date:

05/13/14

Greensea Systems, Inc.
10 East Main Street
PO Box 959
Richmond, Vermont 05477
802.434.6080
info@greenseainc.com

Company: MBARI
Contact: M.Risi
Project: Ventana Software Upgrade
Phone: 831.775.1834
Email: mrisi@mbari.org

Special Instructions:

- Issuing a Purchase Order against this Quotation accepts these terms and conditions
- This is a rough order of magnitude estimate based on a firm-fixed-price program.
- Invoice schedule: 25% upon PO, 25% after acceptance of final design, 25% after acceptance by MBARI
- Estimate does not include on-site support for commissioning or sea trials. Greensea can provide a separate estimate for that effort based on time and materials.

Prepared	Quotation	RFQ	Delivery	Shipping Terms	Shipping Method	Payment Terms
bwk	201714-001	mrise	16 weeks ARO	NA	NA	Due on Receipt

Item	Description	Quantity	Unit Price	Total
1	Preliminary Control System Design. Develop a Software Requirements Specification (SRS) for the Ventana ROV software system. Provide the SRS to MBARI for review and acceptance 4 weeks ARO. Develop a preliminary design for the software system including basic software construction, specifications, IO lists, physical connections, configurations, functional descriptions, and interfaces. Develop preliminary Graphical User Interface screens to convey layout, function, and features. Present a formal Preliminary Design Review (PDR) at MBARI's facility in Moss Landing, CA. Prepare a software license for MBARI's review and acceptance covering all software and deliverables within the scope of the project. Develop test plans for QA, IT&E, and FAT. Deliverables: SRS, preliminary software design, IO list, interface list, physical connection diagram, Graphical User Interface concept screen shots, test plans, and PDR.	1	\$29,790	\$29,790
2	Final Control System Design. Develop a final software design for the Ventana ROV control system based on acceptance of the SRS and PDR from the preliminary design. Develop final high-level software construction diagrams, interfaces, final Graphical User Interface layouts, final IO lists, and final functional descriptions. Present final design in a Critical Design Review (CDR) remotely using video conferencing. Deliverables: final software design, IO list, interface list, functional descriptions, Graphical User Interface screen shots, and CDR materials.	1	\$20,400	\$20,400
3	Development of System Software. Develop the custom applications in the Ventana system utilizing the openSEA framework. Includes licenses to openSEA software included in the system. Complete software and system documentation. Deliverables: Pre-IT&E software releases of Ventana software applications, system documentation, openSEA components, openSEA documentation, and openSEA licenses.	1	\$47,640	\$47,640
4	Integration Testing and Evaluation. Complete component, module, system, and integration testing at Greensea's facility in Richmond, Vermont prior to releasing software. Testing will be documented and recorded and will utilize any available hardware for interface testings as possible. Deliverables: QA and software test reports, post-IT&E software releases of all software ready for system installation.	1	\$7,160	\$7,160
Total				\$104,990
Option SDK	Optional Software Development Kit (SDK) for openSEA library and openSEA applications. Deliverables: SDK for openSEA components delivered within the Ventana system including source code, development license, developer documentation, and build/installation instructions.	1	\$25,000	\$25,000
Options Total				\$25,000



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Estimate Worksheet

Date: 2014-05-13

Customer: MBARI
Quotation: 201714-001
Project: Ventana Software Upgrade

Notes

- initial, jr, 2014/04/10
- mods, bwk, 2014/04/12 ROUGH ORDER OF MAGNITUDE.

Task	Description	Sr. Engineer	Engineer	Eng Tech	Materials	Shipping	Travel	Software Fees	Total
1	Preliminary Control System Design. Develop a Software Requirements Specification (SRS) for the Ventana ROV software system. Provide the SRS to MBARI for review and acceptance 4 weeks ARO. Develop a preliminary design for the software system including basic software construction, specifications, IO lists, physical connections, configurations, functional descriptions, and interfaces. Develop preliminary Graphical User Interface screens to convey layout, function, and features. Present a formal Preliminary Design Review (PDR) at MBARI's facility in Moss Landing, CA. Prepare a software license for MBARI's review and acceptance covering all software and deliverables within the scope of the project. Develop test plans for QA, IT&E, and FAT. Deliverables: SRS, preliminary software design, IO list, interface list, physical connection diagram, Graphical User Interface concept screen shots, test plans, and PDR.	\$11,040.00	\$13,600	\$1,700	\$0	\$0	\$3,450	\$0	\$29,790
2	Final Control System Design. Develop a final software design for the Ventana ROV control system based on acceptance of the SRS and PDR from the preliminary design. Develop final high-level software construction diagrams, interfaces, final Graphical User Interface layouts, final IO lists, and final functional descriptions. Present final design in a Critical Design Review (CDR) remotely using video conferencing. Deliverables: final software design, IO list, interface list, functional descriptions, Graphical User Interface screen shots, and CDR materials.	\$4,800.00	\$8,800	\$6,800	\$0	\$0	\$0	\$0	\$20,400
3	Development of System Software. Develop the custom applications in the Ventana system utilizing the openSEA framework. Includes licenses to openSEA software included in the system. Complete software and system documentation. Deliverables: Pre-IT&E software releases of Ventana software applications, system documentation, openSEA components, openSEA documentation, and openSEA licenses.	\$8,640.00	\$24,000	\$0	\$0	\$0	\$0	\$15,000	\$47,640
4	Integration Testing and Evaluation. Complete component, module, system, and integration testing at Greensea's facility in Richmond, Vermont prior to releasing software. Testing will be documented and recorded and will utilize any available hardware for interface testings as possible. Deliverables: QA and software test reports, post-IT&E software releases of all software ready for system installation.	\$1,920.00	\$3,200	\$2,040	\$0	\$0	\$0	\$0	\$7,160
Totals		\$26,400	\$49,600	\$10,540	\$0	\$0	\$3,450	\$15,000	\$104,990
Option SDK	Optional Software Development Kit (SDK) for openSEA library and openSEA applications. Deliverables: SDK for openSEA components delivered within the Ventana system including source code, development license, developer documentation, and build/installation instructions.	\$0.00	\$0	\$0	\$0	\$0	\$0	\$25,000	\$25,000
Totals		\$0	\$0	\$0	\$0	\$0	\$0	\$25,000	\$25,000

Date:	13. May 2014
Company:	MBARI
Project:	Ventana Software Upgrade
Contact:	M.Risi
Email:	mrissi@mbari.org
Phone:	831.775.1834
Prepared by:	bwk
Terms:	Due on Receipt
RFQ:	mrissi
Delivery:	16 weeks ARO
Duration:	16 weeks
Shipping terms:	NA
Shipping method:	NA
Quotation:	201714-001
ODC fee	15.00%



Ventana Software Upgrade

Task	Description
1	Preliminary Control System Design. Develop a Software Requirements Specification (SRS) for the Ventana ROV software system. Provide the SRS to MBARI for review and acceptance 4 weeks ARO. Develop a preliminary design for the software system including basic software construction, specifications, IO lists, physical connections, configurations, functional descriptions, and interfaces. Develop preliminary Graphical User Interface screens to convey layout, function, and features. Present a formal Preliminary Design Review (PDR) at MBARI's facility in Moss Landing, CA. Prepare a software license for MBARI's review and acceptance covering all software and deliverables within the scope of the project. Develop test plans for QA, IT&E, and FAT. Deliverables: SRS, preliminary software design, IO list, interface list, physical connection diagram, Graphical User Interface concept screen shots, test plans, and PDR.
2	Final Control System Design. Develop a final software design for the Ventana ROV control system based on acceptance of the SRS and PDR from the preliminary design. Develop final high-level software construction diagrams, interfaces, final Graphical User Interface layouts, final IO lists, and final functional descriptions. Present final design in a Critical Design Review (CDR) remotely using video conferencing. Deliverables: final software design, IO list, interface list, functional descriptions, Graphical User Interface screen shots, and CDR materials.
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4	Integration Testing and Evaluation. Complete component, module, system, and integration testing at Greensea's facility in Richmond, Vermont prior to releasing software. Testing will be documented and recorded and will utilize any available hardware for interface testings as possible. Deliverables: QA and software test reports, post-IT&E software releases of all software ready for system installation.
Option SDK	Optional Software Development Kit (SDK) for openSEA library and openSEA applications. Deliverables: SDK for openSEA components delivered within the Ventana system including source code, development license, developer documentation, and build/installation instructions.



Rate Sheet

Item	Description	Unit	Rate
1	Senior Engineer. Facility hourly rate.	Hour	\$120.00
2	Senior Engineer. Offshore or shipboard, out of facility rate.	Day	\$1,540.00
3	Engineer: Hourly rate.	Hour	\$100.00
4	Engineer: Offshore or shipboard, out of facility day rate.	Day	\$1,300.00
5	Engineering Technician: Facility hourly rate.	Hour	\$85.00
6	Engineering Technician: Offshore or shipboard, out of facility day rate.	Day	\$1,120.00
7	Administrative assistant: Facility hourly rate.	Hour	\$75.00
8	Fee applied to Other Direct Charges (Cost + feel)	Each	15.00%
9	ODCs are billed at actual cost plus fee and include any costs incurred outside of the standard labor rates above. ODCs typically include travel, meals, accommodations, materials, shipping, fares, communications, etc.		
10	Out-of-facility, non-offshore or shipboard, work is calculated using the standard hourly rate for the particular labor type and has an 8-hour minimum charge per day.		
11	Travel days are calculated using the standard hourly rate for the particular labor type and have an 8-hour minimum charge per day.		
12	Greensea Systems, Inc. uses the US Government published per diem rates based on the location the work is conducted for all meal allowances during travel.		
13	Payment and billing terms to be quoted per project.		

- 1 Preliminary Control System Design. Develop a Software Requirements Specification (SRS) for the Ventana ROV software system. Provide the SRS to MBARI for review and acceptance 4 weeks ARO. Develop a preliminary design for the software system including basic software construction, specifications, IO lists, physical connections, configurations, functional descriptions, and interfaces. Develop preliminary Graphical User Interface screens to convey layout, function, and features. Present a formal Preliminary Design Review (PDR) at MBARI's facility in Moss Landing, CA. Prepare a software license for MBARI's review and acceptance covering all software and deliverables within the scope of the project. Develop test plans for QA, IT&E, and FAT. Deliverables: SRS, preliminary software design, IO list, interface list, physical connection diagram, Graphical User Interface concept screen shots, test plans, and PDR.**

Total Cost	\$29,790.00
Senior Engineer	\$11,040.00
Engineer	\$13,600.00
Eng. Tech	\$1,700.00
Materials	\$0.00
Shipping	\$0.00
Travel	\$3,450.00
Software Fees	\$0.00

Task	Description	Senior Engineer (Hours)	Engineer (Hours)	Eng. Tech (Hours)	Travel	Materials	Software
1.1	Software Requirements Specification.	40	0	0	\$0.00	\$0.00	\$0.00
1.2	Preliminary software design.	20	80	20	\$0.00	\$0.00	\$0.00
1.3	Test plans.	8	32	0	\$0.00	\$0.00	\$0.00
1.4	Preliminary design review at Moss Landing.	24	24	0	\$3,000.00	\$0.00	\$0.00

- 2 **Final Control System Design. Develop a final software design for the Ventana ROV control system based on acceptance of the SRS and PDR from the preliminary design. Develop final high-level software construction diagrams, interfaces, final Graphical User Interface layouts, final IO lists, and final functional descriptions. Present final design in a Critical Design Review (CDR) remotely using video conferencing. Deliverables: final software design, IO list, interface list, functional descriptions, Graphical User Interface screen shots, and CDR materials.**

Total Cost	\$20,400.00
Senior Engineer	\$4,800.00
Engineer	\$8,800.00
Eng. Tech	\$6,800.00
Materials	\$0.00
Shipping	\$0.00
Travel	\$0.00
Software Fees	\$0.00

Task	Description	Senior Engineer (Hours)	Engineer (Hours)	Eng. Tech (Hours)	Travel	Materials	Software
2.1	Final software design.	32	80	80	\$0.00	\$0.00	\$0.00
2.2	Critical Design Review – remote meeting.	8	8	0	\$0.00	\$0.00	\$0.00

- 3 Development of System Software. Develop the custom applications in the Ventana system utilizing the openSEA framework. Includes licenses to openSEA software included in the system. Complete software and system documentation. Deliverables: Pre-IT&E software releases of Ventana software applications, system documentation, openSEA components, openSEA documentation, and openSEA licenses.**

Total Cost	\$47,640.00
Senior Engineer	\$8,640.00
Engineer	\$24,000.00
Eng. Tech	\$0.00
Materials	\$0.00
Shipping	\$0.00
Travel	\$0.00
Software Fees	\$15,000.00

Task	Description	Senior Engineer (Hours)	Engineer (Hours)	Eng. Tech (Hours)	Travel	Materials	Software
3.1	Graphical User Interface development.	40	120	0	\$0.00	\$0.00	\$0.00
3.2	Control system software development.	32	120	0	\$0.00	\$0.00	\$0.00
3.3	openSEA licenses and installation.	0	0	0	\$0.00	\$0.00	\$15,000.00

- 4 **Integration Testing and Evaluation. Complete component, module, system, and integration testing at Greensea's facility in Richmond, Vermont prior to releasing software. Testing will be documented and recorded and will utilize any available hardware for interface testings as possible. Deliverables: QA and software test reports, post-IT&E software releases of all software ready for system installation.**

Total Cost	\$7,160.00
Senior Engineer	\$1,920.00
Engineer	\$3,200.00
Eng. Tech	\$2,040.00
Materials	\$0.00
Shipping	\$0.00
Travel	\$0.00
Software Fees	\$0.00

Task	Description	Senior Engineer (Hours)	Engineer (Hours)	Eng. Tech (Hours)	Travel	Materials	Software
4.1	IT&E.	8	24	24	\$0.00	\$0.00	\$0.00
4.2	QA.	8	8	0	\$0.00	\$0.00	\$0.00

Option SDK **Optional Software Development Kit (SDK) for openSEA library and openSEA applications. Deliverables: SDK for openSEA components delivered within the Ventana system including source code, development license, developer documentation, and build/installation instructions.**

Total Cost	\$25,000.00
Senior Engineer	\$0.00
Engineer	\$0.00
Eng. Tech	\$0.00
Materials	\$0.00
Shipping	\$0.00
Travel	\$0.00
Software Fees	\$25,000.00

Task	Description	Senior Engineer (Hours)	Engineer (Hours)	Eng. Tech (Hours)	Travel	Materials	Software
Option_SDK.1	Software Development Kit (SDK) for openSEA.	0	0	0	\$0.00	\$0.00	\$25,000.00