Application for Consent to Conduct Marine Scientific Research in Areas Under National Jurisdiction of

Seychelles

Date: 12/05/2008

1. General Information

1.1 Cruise name and/or #:	**CLIVAR I7N; KNOX Expedition**

1.2 Sponsoring institution:	
Name:	**Scripps Institution of Oceanography**
Address:	**University of California, San Diego La Jolla, CA 92093-0210**
Name of Director:	**Dr. Tony Haymet**

1.3 Scientist in charge of the project (include CV and passport photo):	
Name:	**James Swift (see attached CV: JHS_CV_for_I5_I7N_AUG2008.pdf)**
Address:	**Scripps Institution of Oceanography 9500 Gilman Drive La Jolla CA 92093-0214 USA**
Telephone:	**858-534-3387**
Fax:	**858-534-7383**
Email:	jswift@ucsd.edu

1.4 Scientist(s) from coastal state involved in the planning of the project:	
Name(s):	
Address:	

1.5 Submitting officer:	
Name and address:	**Rose M. Dufour/Elizabeth Brenner Scripps Institution of Oceanography University of California, San Diego La Jolla, California 92093-0210**
Nationality:	**USA**
Telephone:	**(858) 534-2841**
Fax:	**(858) 822-5811**
Email:	**Shipsked@ucsd.edu**

2. Description of Project (Attach additional pages as necessary)

2.1 Nature and objectives of the project:
See attachment (I5_I7N _overview.doc) most of the work will take place in international waters.

2.2 Relevant previous or future research cruises:
See attachment **Also see: http://ccho.ucsd.edu/data_access?ExpoCode=316N145_10**

2.3 Previously published research data relating to the project:
See attachment

3. Methods and Means to be Used

3.1 Particulars of vessel:	
Name:	*R/V Roger Revelle*
Nationality (Flag state):	**USA Flag**
Owner:	**U.S. Navy**
Operator:	**University of California, San Diego, Scripps Oceanography**
Overall length (meters):	**84 m. [275']**
Maximum draught (meters):	**17'**
Displacement/Gross tonnage:	**3,180 long tons**
Propulsion:	**Tow 3000 hp Propulsion General Electric Bow Thruster: 1180 hp Azimuthing jet Tyupe Elliot Gill Model 50T 35 Propulsors: Two 3000 hp Z-Drives Lips Type FS 2500-450/1510BO**
Cruising & Maximum speed:	**12 knots**
Call sign:	**KAOU**
Method and capability of communication (including emergency frequencies):	**Email, master@rv-revelle.ucsd.edu** **Inmarsat-B,** **Telephone,** **Indian, 011-873-336780030** **Alternate, 011-873-336780020** **Fax,** **Primary, 011-873-336780031** **Alternate, 011-873-336780021** **Telex,** **Primary, 336780033 (AnsBk=KAOU)** **Alternate, 336780022 (AnsBk=KAOU)** **Inmarsat-C, 436780010** **Radio, Vessels guard standard GMDSS frequencies for calling, distress and dissemination of marine safety information.** **MMSI #, 367800100** **SELCAL #, 71410** **Telex,** **Primary, 336780033 (AnsBk=KAOU)** **Alternate, 336780022 (AnsBk=KAOU)** **Inmarsat-C, 436780010** **Radio, Vessels guard standard GMDSS frequencies for calling, distress and dissemination of marine safety information.** **MMSI #, 367800100** **SELCAL #, 71410**
Name of master:	**Thomas Desjardins**
Number of crew:	**22**
Number of scientists on board:	**No more than 37**

3.2 Aircraft or other craft to be used in the project:
None

3.3 Particulars of methods and scientific instruments		
Types of samples and data	Methods to be used	Instruments to be used
Data available within ca. 2-12 months of cruise end: Temperature, salinity, dissolved	**Underway measurements from continuously pumped surface seawater and on-board sensors;**	**Thermosalinograph, acoustic doppler sonars ADCP RDI Narrowband and RDI**

oxygen, dissolved nutrients, currents, dissolved CFCs, dissolved inorganic carbon, alkalinity, pH, dissolved trace metals, partial pressure of CO2, meteorological measurements if available. Data available within ca. 1-2 years: dissolved organic matter, total dissolved nitrogen. Data available within 3-5 years: dissolved helium, dissolved tritium, dissolved radiocarbon.	**vertical profiles at station stops with CTD and rosette**	**Broadband 150 kHz, CTD rosette with 24-36 10-liter Niskin-type bottles and SeaBird 911+ CTD**
Bathymetry and sidescan	**Swath mapping**	**EM120 12 kHz 150 deg swath**
Sub-bottom acoustic profile	**3.5 kHz echo sounder**	**Knudsen 320B 3.5/12**
Magnetics if collected	**Magnetic gradiometer**	**Marine Magnetics Seaspy Gradiometer**
Gravity if collected	**Gravimeter**	**Bell BMG-3 Gravimeter**

3.4 Indicate whether harmful substances will be used:
None

3.5 Indicate whether drilling will be carried out:
None

3.6 Indicate whether explosives will be used:
None

4. Installations and Equipment

Details of installations and equipment (dates of laying, servicing, recovery; exact locations and depth):
None

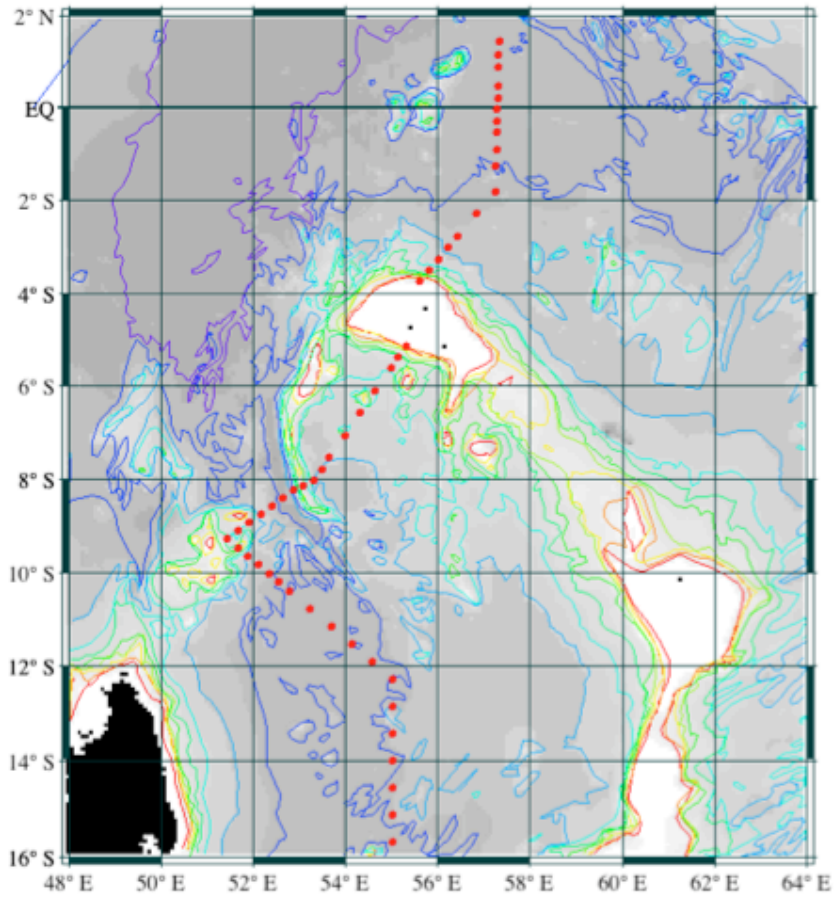
5. Geographical Areas

5.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude):

(See attached list of station for the complete cruise track).
The following stations are in Seychelles EEZ

Station #	Latitude	Longitude
755	1.23 S	57.24 E
754	1.77 S	57.22 E
753	2.26 S	56.82 E
752	2.74 S	56.40 E
751	3.00 S	56.19 E
750	3.24 S	56.00 E
749	3.48 S	55.79 E
748	3.72 S	55.59 E
747	5.11 S	55.28 E
746	5.35 S	55.12 E
745	5.59 S	54.96 E
744	6.07 S	54.63 E
743	6.55 S	54.29 E
742	7.04 S	53.96 E
741	7.52 S	53.63 E
740	7.76 S	53.46 E
739	8.00 S	53.30 E
738	8.11 S	53.08 E
737	8.20 S	52.86 E
736	8.38 S	52.63 E
735	8.55 S	52.38 E
734	8.73 S	52.15 E
733	8.91 S	51.90 E
732	9.09 S	51.66 E
731	9.26 S	51.43 E
730	9.45 S	51.65 E
729	9.63 S	51.87 E
728	9.82 S	52.09 E
727	10.00 S	52.32 E
726	10.19 S	52.54 E
725	10.38 S	52.77 E
724	10.75 S	53.21 E
723	11.13 S	53.66 E

5.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment.



R/V Roger Revelle 2009 "I7N" CO2/CLIVAR Cruise
Detail of planned stations near central portion of I7N
(stations in EEZs will be along track shown; exact positions may vary slightly)

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel:
33 Station are planned between 15 September 15 – 10 October, 2009 in Seychellois Exclusive Economic Zone.

6.2 Indicated if multiple entry is expected:
Multiple entry not expected.

7. Port Calls

7.1 Dates and names of intended ports of call:
Victoria, Seychelles between station 748 and 747. Dates TBD (approximately 9/24; arriving 9/23 & departing 9/25)

7.2 Any special logistical requirements at ports of call:
Normal; replenishment of fruits and vegetables.

7.3 Name/Address/Telephone of shipping agent (if available):
Hunt Deltel & Co, Ltd **2nd Floor Trinity House** **Albert Street** **P.O. BOx 14** **Victoria, Mahe** **Seychelles**

8. Participation:

8.1 Extent to which coastal state will be enabled to participate or to be represented in the research project:
The coastal State is able to participate on the cruise if they wish to send a participant.

8.2 Proposed dates and ports for embarkation/disembarkation:
R/V *Revelle* will be in **Mutrah ((Port Sultan Qaboos) 28 August – September 01 2009.** **The cruise will end in Cape Town, South 25 October 2009, however a port call is anticipated in Victoria, Mahe Seychelles approximately Sept. 23-26, 2009.**

9. Access to data, samples and research results

9.1 Expected dates of submission to coastal state of preliminary reports, which should include the expected dates of submission of the final results:
No more than 30 days from the end date of the cruise (currently 25 October 2009).

9.2 Proposed means for access by coastal state to data and samples:
Preliminary data will be made available by CD and/or DVD to SIO Ship Scheduling within 1-5 months of the cruise completion.

9.3 Proposed means to provide coastal state with assessment of data, samples and research results or provide assistance in their assessment or interpretation:
See 9.2

9.4 Proposed means of making results internationally available:
See 9.2

(Revised June 5, 2002)