The Frame-Grabber System for Integrated Content and Data Access



Steven Lerner Deep Submergence Laboratory Woods Hole Oceanographic Institution INMARTECH, October 18, 2006

Frame-Grabber Background

- Solution of the second seco
 - ROV Jason VirtualVan
 - HOV Alvin FrameGrabber
 - AUV SeaBed
- Ship Data-Grabber
 - Installed on Atlantis, Knorr, Oceanus, Tioga
 - Shore repository for underway data
- 🖉 ExView
 - Developed for Latte06 and SW06 experiments
 - Test collaboration tools

Frame-Grabber Overview

- Snapshot integrated data/information at regular intervals
- ✓ UDP-based Data Delivery
- Provide a simple web front-end for users onship and on-shore (post-cruise)
- Simple ASCII Data Format (EIC,CSV,XML)
- Built-in navigation tools for time, event, and geographic indexing

Philosophy

- Complement existing Data Acquisition Systems
- Snapshot real-time integrated data
- Provide composite view of data (templates)
- Provide real-time displays for Q/A
- Simple web-based capabilities for on-ship and on-shore
- Self-contained on-ship, take advantage of Satellite-Communications where available
- Minimal support required to operate system

ROV Jason VirtualVan





Control-Van

Snapshot Video Displays Navigation Vehicle Telemetry Science Instruments User Events

> VirtualVan user web-interface



ROV Jason VirtualVan



Web-based Event Logger

Acquisition Screen

DSV Alvin Frame-Grabber

User Interface

DSV Alvin





Clickable Map Source 1: SubSeal Source 2: SubSea2 Hdg: +152.226 DAQ Time: 2005/05/23 19:15:32 LoTemp: Depth: +2452.051 DAO.ActiveDive.Alvin Lat: 0 48.345480 M 2005/05/23 19:15:28 NavTime: IciTemp: Lon: 86 13.650240 W TDepth: 2452.051 AmbTmp: 2.152 C MagX: 20508.3 X: +2504.293 Y: +61448.598 DopAlt: -0.081 MagY: 13607.3 Type: ASNAP NavAttSrc: PWHANA Pitch: -4.832 Roll: -2.322 MagZ: -13910.2 MagZ2: -14999.3 EType: Event: MagT: 28270.8 o browse, click on TimeBar or use Nav Buttons. Interactive 2005/05/11 10:00:01 Time-Bar answere assault Dive4116 전 전 및 🚵 SnapSho 44 - 4 - 8 - F - FF Summary #048

Acquisition System

DSV Alvin Frame-Grabber





Acquisition Status Display

AUV SeaBed DataAccess



Ship DataGrabber

- Features/Capabilities:
 - UDP data delivery from Calliope
 - Minimal operations support required
 - Interactive time-series/geographic plots
 - Real-time display and data statistics for Q/A
 - Data Dictionary/Real-time SDG data format
 - Interface with web-based EventLogger
 - On-shore repository
 - Web-Based user interface
 - R/T Data Communications to shore (SW06/Future)
 - Links to on-line Data and increased interoperability (Future)

Ship DataGrabber – Acquisition

R/V Atlantis: Ship DataGrabber System - v2.2



- <u>Pre-Cruise Form</u>
 <u>Image/Data Acquisition</u>
 <u>Update Cruise HTML</u>
 <u>Event Logger</u>
 View: <u>R/T Data Display, ActiveCruise</u>
 View: Interactive Data Viewer
- View: Other Atlantis Cruises

For testing: UDP Read, UDP Write

Ship DataGrabber – Pre-Cruise

Step 1: Fill-out Pre-Cruise Form

The Pre-Cruise Form provides basic cruise meta-data such as CruiseID, Location, Captain, Chief Scientist, etc. The intent is to keep this to a minimum while providing useful information.

<u>c:/Configurati</u>	ionFiles/ship_	Oceanus precruise.txt	s: Pre-Cruise For	m	
CruiseID:	OC417	(eg; AT07-9)			
Location:	WHOI - line	(eg;	East Pacific Rise)		
Captain:	Lawren	nce Bearse	Chief Scientist:	Ruth Curry	
Departure	Port: WHOI		Arrival Port:	WHOI	
SSSG Tech	nician: Patric	k			
Cruise Syno	opsis:				
Line "W" study. Tr Additiona	22 CTD s ransit to al scienc	tatsions S south end e to colle	alt, O2, and and sample k ct bio sample	Gas long term back to WHOI. es for UGA	~
					~
		Reset	Update Clos	e	

Ship DataGrabber – Acquisition

Step 2: Start the acquisition process and check for green lights and valid data

IDAQ Start Stop EndCruise CurrentTime: 2006/10/17 04:03:23 GMT Grabimage DaqState VideoServer ShipData Asnap Max Min Next: 884 (sec) Port=5008 Event: LogEvent Target											
TimeStamp: 2006/10/17 04:03:07 Gyro: 311.61 Lat: 43:2412 Lon: -119:2412 SpdLg: 10.61 EType: HdChkSum: 14-14 GPS COG: 312.61 GPS SOG: 11.61 Depth12: 1001:241: Depth35: 1002:241:											
SSCND:	51.2412	min:	51.2412	max:	51,2412	Salnity:	38.2412	min:	38.2412	max:	38.2412
SSTMP:	19.2412	min:	19.2412	max:	19:2412	Fluorometer:		min:		max:	
AirTemp	: 19.2412	min:	19.2412	max:	19,2412	WndSpd;	3.2412	min:	3.2412	max:	3.2412
BarPres	1015.61	min:	1015.61	max:	1015.61	WndDir:	281.61	min:	281.61	max:	281.61
RelH:	76.2412	min:	76.2412	max:	76.2412				Reset M	in/Max V	/alues
SWR:	-0.61	min:	-0.61	max:	-0.61					Vie	w Plots
SENDING S	MULATED	ShipHI	DR.ShipDa	ta 2006	/10/17 04:0	3:23 x2-36 x4-4026	5				
ulate Data 🗹	Simulate	Image	s 🗌 Dis	splay C	sv 🔳	View: Config F	ile Data	a Dict	DAQ L	og A	disServer Ad

Minimize Acquisition Status Display



Ship DataGrabber – End Cruise

Step 3:

IDAQ

Port=5008 Event:

At the End of Cruise, press the 'Stop' button and click 'EndCruise' to display the End of Cruise form.

CurrentTime: 2006/10/17 04:04

Max

EndCruise...

DaqState VideoServer ShipData Asnap

	c:/Configuration	onFiles/	OC ship precruise	eanus .txt	: Pre-Cruise For	m	
	CruiseID:	OC417	(eg; ATC)7-9)			
c	Location:	WHOI	line	(eg;	East Pacific Rise)		
3	Captain:	L	awrence Bears	е	Chief Scientist:	Ruth Curry	
	Departure I	Port: V	VHOI		Arrival Port:	WHOI	
	SSSG Techn	ician:	Patrick				
	Cruise Syno	psis:					
4:19 C Mir	Line "W" study. Tr Additiona	22 CI ansit 1 sci	D statsic to south ence to c	ns S end olle	alt, O2, and and sample k ct bio sample	Gas long term back to WHOI. es for UGA	~
							ý.
				End o	f Cruise Close		
	Processing	Complet	9				

The End of Cruise Form contains the information entered from the pre-cruise form and archives the dataset when the 'End of Cruise' button is pressed.

Ship DataGrabber – User Options

R/V Atlantis: Underway Ship Data CruiseID: <u>AT11-16</u>

- Real-Time Data Display
 - Interactive Data Viewer
 - AT11-16 Ship DataGrabber
 - Event Logger
 - Other Cruises

Ship DataGrabber – R/T Display

DAQ.Atlantis.AT11-16 CurrTime: 2006/10/17 04:25:01 DataTime: 2006/10/17 04:24:00 ShipDataSrc: CSV	Gyro: 311.45 deg Lat: 43 37.404000 N Lon: 119 37.404000 W	COG: 312.45 deg SOG: 11.45 knt SpdLg: 10.45 12 kHz: 1001.6234 3.5 kHz: 1002.6234
SSTMP: 19.6234 degC SSCND: 51.6234 mmho/cm Salinity: 38.6234 psu Fluor: mv	AirTemp: 19.6234 degC BarPres: 1015.45 millibar RelH: 76.6234 % SWR: -0.45 w/m^2	WndSpd: 3.6234 m/s WndDir: 281.45 deg
Alternate Units SSTMP: 67.32 °F AirTemp: 67.	32 ºF WndSpd: 7.04 knot	ts
	Auto	oRefresh=15 sec Refresh

Real-time Web-Based Data Display

Ship DataGrabber – User Options

R/V Atlantis: Underway Ship Data CruiseID: <u>AT11-16</u>

- Real-Time Data Display
- Interactive Data Viewer
- AT11-16 Ship DataGrabber
- Event Logger
- Other Cruises

Ship DataGrabber – Interactive Plots



Ship DataGrabber – Cruise Info

R/V Cru	Oceanus ShipData iselD: OC417 <u>Cruise Info Events Statistic</u> <u>DGV Cruise Plots</u>	Oct: 12 13 14 15 16 17 18 Plot: Full Cr Total: 7 Days Download: Cruise View: Data D	<u>uise</u> CSV 20051012 CSV ictionary (Edit) R/T Data	
	SST	IP - Data Plot for 2005/10/12		
Prev/2		R/V Oceanus Cr Location: W	uiseID: OC417 HOI - line	
	Start Time:	2005/10/12 02:46:48		
12k 3.5k	End Time:	2005/10/18 19:15:06		
AirT	Captain:	Capt. Lawrence Bearse		
Lon	ChiefSci:	Ruth Curry , Woods Hole		
<u>SSC</u> SST	- ·	Line "W" 22 CTD stations	Salt, O2, and Ga	s long term study. Transit
<u>CO(</u> <u>SO(</u> Gyn	Synopsis:	to south end and sample bio samples for UGA.	back to WHOI. Ad	dditional science to collect
Barl SW	Cruise at a glance:	TimeSeries Plots, Nav XY-Plot		
Relh sbe4 sbe4 sbe4	150 X 155 X 155 18,00	h M. Iw	d0	1.6
sbe4 Salir	17.00	June W	40	
Fluo	rometer 15.00	<u> </u>		Lan
Wnd	04:00 ISpd	8:00 12:00 16:00 20:00 0	9900	

Ship DataGrabber – Statistics

R/V Ocea CruiselD View: <u>Crui</u> <u>SDGV</u> (anus ShipData : OC417 <u>se Info Evento Si Cruise Plots</u>	tatistics	Oct: <mark>12 13 14</mark> Total: 7 Day	<u>15 16 17 18</u> s	Plot: Downlo View:	Full Cruise oad:Cruise CSV Data Dictiona	2005101 ary (Edit)	2 CSV R/T Data			
	10 - 10-	SSTMF	P - Data Pl	ot for 200	5/10/12	2					
	The course of the second	Cru	ise ShipDat	ta Statistic	s for R	V Oceanus, C	ruiseID	OC417	MP:	18.6	524 degC 10/12 23:59:22
Prev/Next_D:	Cruise Stats	min	max	ave	OoR	Cruise Stats	min	max	ave	OoR	.20345
401416	SSTMP	16.016	4 35.7838	23.099		AirTemp	-19.84	49.91	47.931		CK (start pos=<<<)
3.5kHz	SSCND	5.0757	67.3678	48.990	88	BarPres	991.05	1022.12	1007.111		
AirTemp	Salinity	2.3536	36.6996	33.343	105	RelH	0.07	77.68	64.236		
Latitude	Fluor	20.00	1365.92	124.620	6	SWR	-1.5	956.2	101.010		SSTOP -
SSCND											- 23
SSTMP	GPS COG	0.0	359.0	185.101		WindSpd	0.73	25.91	11.904		- 22
COG SOG	GPS_SOG	0.00	13.30	5.590		WindDir	0.3	359.9	182.634		- 21 20
Gyro	Spd	-2.00	12.80	5.103	102						- 19
BarPress	Depth12	0.00	5898.00	1605.021							10
RelH	Depth35	0.00	2660.00	33.030							1 6
sbe45c sbe45s	Total Records: 96	537									
sbe45t sbe45v Salinity Fluoromete	17,00 -			ŋ	wra	M.A.			.0.2 -71 -71 -	, , 71 -71 -	71 -70 -70 -70
Speed WndDir WndSpd	15.00 Li. 04:0	0 08:	:00 12:0	0 16:00	. <mark>1</mark> D 20	00:00 00:00	<u> </u>			U.	90.

Ship DataGrabber – Data Dictionary

V Atlan ruiselD: iew: Cruis SDGV C	tis Ship AT13-01 Info Eve Cruise Plot	Data <u> </u> 	Jan: <u>17 18 1</u> <u>25 26 2</u> Feb: <u>01</u> Total: 16 D	9 <mark>20 21 22 2</mark> 7 28 29 30 3 ays	<u>324</u> 1	Plot: Downloa View	Full C ad: Cruise Data I	ruise CSV 20 Dictionary	0060120 CSV (Edit) <u>R/T Data</u>		
		Variable	Label	Units	Min	Max	PlotMin	PlotMax	PlotTitle	Format/Conventions	
	Dispersioners	air_temp	AirTemp	degC	-20	50	-8	25	Air Temperature		
	UseDict	date	Date							yyyy/mm/dd	:59:4
New Dee		dec_lat	Latitude	deg						+Northern Hemisphere	5
		dec_lon	Longitude	deg						-Western Hemisphere	s=<<<)
titude	AT13-01	depth12	12kHz	meters	0	10000	0.0	6000.0	12kHz Depth		
ngitude	11.1.5-01	depth35	3.5kHz	meters	0	10000	0.0	6000.0	3.5kHz Depth		
<u>kHz</u>	24.00	fluorometer	Fluorometer	mv	0	500					
G		gps_cog	COG	deg	0	360	0.0	360.0			- 24
0	22.00	gps_sog	SOG	knt	0	20	0.0	20.0			
emp		gyro	Gyro	deg	0	360	0.0	360.0			-
R	_ 20.00	hrh	RelH	%	0	100	0.0	100.0	Relative Humidity		- 7
1		imet_bpr	BarPress	millibar	700	1200	940.0	1060.0			1
450 456	± 18.00	imet_swr	SWR	w/m^2	-1.5	1600					
<u>45t</u>	EL S2	salinity	Salinity	psu	20	50					× -
nity	15.00	sbe45c	sbe45c	mmho/m							
IMP		sbe45s	sbe45s	psu							
dDir	14.00	sbe45t	sbe45t	degC	0	40					3-69-61
dSpd	13.44	sbe45v	sbe45v	m/s							
	12.00	spd	Speed	knt	0	20	0.0	20.0			
	0000	ssend	SSCND	mmho/cm	30	70					
		sstmp	SSTMP	degC	0	40					
		time	Time							hh:mm:ss (GMT)	

Ship DataGrabber – Download CSV

R/V Oceanus ShipData CruiselD: OC417 View: Cruise Info Events Statistics SDGV Cruise Plots	Oct: <u>12131415161718</u> Total: 7 Days	Plot: Full Cruise Down Cruise CSV 20051012 CSV View: Data Dictionary (Edit) R/T Dat	a
#fields:date,time_gmt,de 2005/10/12, 02:45:43, 2005/10/12, 02:45:43, 2005/10/12, 02:47:43, 2005/10/12, 02:47:43, 2005/10/12, 02:48:43, 2005/10/12, 02:48:43, 2005/10/12, 02:49:43, 2005/10/12, 02:51:43, 2005/10/12, 02:51:43, 2005/10/12, 02:53:43, 3.5kHz 2005/10/12, 02:55:42, Latitude 2005/10/12, 02:55:42, Latitude 2005/10/12, 02:55:43, SSCND 2005/10/12, 02:55:43, SSCND 2005/10/12, 03:01:43, SOG 2005/10/12, 03:01:43, SOG 2005/10/12, 03:02:44, Gyro 2005/10/12, 03:03:43, Sbe45c 2005/10/12, 03:03:43, Sbe45s 2005/10/12, 03:01:43, Sbe45s 2005/10/12, 03:10:43, Sbe45s 2005/10/12, 03:11:42, Sof10/12, 03:	pth12, depth35, air_temp, 18.88, 0.00, 49.91, 18.95, 0.00, 49.91, 18.97, 0.00, 49.91, 18.74, 0.00, 49.91, 19.01, 0.00, 49.91, 19.01, 0.00, 49.91, 19.17, 0.00, 49.91, 18.78, 0.00, 49.91, 18.79, 0.00, 49.91, 18.79, 0.00, 49.91, 18.79, 0.00, 49.91, 18.79, 0.00, 49.91, 18.79, 0.00, 49.91, 18.79, 0.00, 49.91, 18.99, 0.00, 49.91, 18.99, 0.00, 49.91, 18.99, 0.00, 49.91, 18.99, 0.00, 49.91, 18.70, 0.00, 49.91, 18.70, 0.00, 49.91, 18.92, 0.00, 49.91, 18.95, 0.00, 49.91, 18.84, 0.00, 49.91, 18.84, 0.00, 49.91, 18.85, 0.00, 49.91, 18.86, 0.00, 49.91, 18.86, 0.00, 49.91, 18.85, 0.00, 49.91, 18.85, 0.00, 49.91, 18.85, 0.00, 49.91, 18.85, 0.00, 49.91, 18.85, 0.00, 49.91, 18.86, 0.00, 49.91, 18.90, 0.00, 49.91, 19.07, 0.00, 49.91, 19.97, 0.00, 49.91, 19.	dec_lat, dec_lon, sscnd, sstmp, gpa_cog, gps_ 41.52385, -70.67230, 44.8068, 21.6582 41.52385, -70.67232, 44.8039, 21.6564 41.52385, -70.67232, 44.8037, 21.6547 41.52385, -70.67232, 44.8067, 21.6547 41.52385, -70.67232, 44.8007, 21.6513 41.52385, -70.67232, 44.8037, 21.6513 41.52385, -70.67232, 44.8032, 21.6449 41.52385, -70.67230, 44.7984, 21.6492 41.52385, -70.67230, 44.7945, 21.6449 41.52385, -70.67232, 44.7864, 21.6357 41.52385, -70.67232, 44.7879, 21.6375 41.52385, -70.67232, 44.7810, 21.6329 41.52385, -70.67232, 44.7808, 21.6429 41.52385, -70.67232, 44.7808, 21.6329 41.52385, -70.67232, 44.7780, 21.6269 41.52385, -70.67232, 44.7780, 21.6269 41.52385, -70.67232, 44.7780, 21.6269 41.52385, -70.67232, 44.7758, 21.6251 41.52385, -70.67232, 44.7724, 21.6174 41.52385, -70.67232, 44.7724, 21.6129 41.52385, -70.67232, 44.7724, 21.6129 41.52385, -70.67232, 44.7724, 21.6129 41.52385, -70.67232, 44.7724, 21.6129 41.52385, -70.67232, 44.7758, 21.6261 41.52385, -70.67232, 44.7758, 21.6261 41.52385, -70.67232, 44.7759, 21.6261 41.52385, -70.67232, 44.7663, 21.6159 41.52385, -70.67232, 44.7659, 21.6124 41.52385, -70.67232, 44.7594, 21.6119 41.52385, -70.67232, 44.7594, 21.6119 41.52385, -70.67232, 44.751, 21.6021 41.52385, -70.67232, 44.751, 21.6021 41.	<pre>og, gyro, imet bpr, imet swr, prc, hrh, st , 27.0, 0.10, 27.6, 1019.15, 0, , 440.0, 0.10, 27.5, 1019.10, (, 40.0, 0.10, 27.6, 1019.25, 0, , 314.0, 0.10, 27.6, 1019.25, 0, , 314.0, 0.10, 27.5, 1019.23, 0, , 46.0, 0.10, 27.4, 1019.28, 0, , 46.0, 0.10, 27.4, 1019.28, 0, , 46.0, 0.10, 28.1, 1019.23, 0, , 28.0, 0.10, 28.0, 1019.24, 0, , 335.0, 0.10, 28.1, 1019.33, 0, , 10.0, 0.10, 28.1, 1019.28, (, 335.0, 0.10, 28.1, 1019.28, (, 335.0, 0.10, 28.1, 1019.28, (, 335.0, 0.10, 28.1, 1019.28, 0, , 29.0, 0.10, 27.7, 1019.22, (, 49.0, 0.10, 27.7, 1019.22, 0, , 21.0, 0.10, 26.1, 1019.44, 0. , 327.0, 0.10, 26.7, 1019.30, 0, 20. , 38.0, 0.10, 26.7, 1019.30, 0, 21. 23. 24. 25. 27.0, 0.10, 26.7, 1019.31, 0, 19. 19. , 343.0, 0.10, 26.7, 1019.31, 0, 19. , 343.0, 0.10, 26.7, 1019.31, 0, 19. , 343.0, 0.10, 27.3, 1019.35, 0, , 37.0, 0.10, 27.1, 1019.27, 0, , 351.0, 0.10, 27.1, 1019.27, 0, , 351.0, 0.10, 27.4, 1019.31, 0, 17. , 16.0, 0.10, 27.6, 1019.33, (, 10.0, 0.10, 27.4, 1019.21, 0, , 351.0, 0.10, 27.4, 1019.22, (, 40.0, 0.10, 27.6, 1019.05, 0, , 27.0, 0.10, 27.6, 1019.05, 0, , 28.0, 0.10, 27.6, 1019.02, 0, , 35.0, 0.10, 27.8, 1019.22, (, 40.0, 0.10, 27.8, 1019.22, (, 40.0, 0.10, 27.8, 1019.22, (, 350.0, 0.10, 27.8, 1019.22, (, 350.0, 0.10, 27.8, 1019.22, (, 350.0, 0.10, 27.8, 1019.23, 0, , 350.0, 0.10, 27.8, 1019.20, 0, , 350.0, 0.10, 2</pre>

Ship DataGrabber – User Options

R/V Atlantis: Underway Ship Data CruiseID: <u>AT11-16</u>

- Real-Time Data Display
- Interactive Data Viewer
- AT11-16 Ship DataGrabber
 - Event Logger
 - Other Cruises

Ship Data – Integrated Display

R/V Oceanus ShipData CruiselD: OC412-1

07 08 09 1	0 <u>11 12 13 14 15</u>	To view a specific TimeSeries p	lot, click on a variable nam	ie)	
Hour: 11 12 13 14 22 23	<u>94 05 06 07 08 09 10</u> 15 16 17 18 19 20 21	DAQTime: 2005/05/14 00:10:38 DataTime: 2005/05/14	Gyro: 149.2 deg Lat: 43 40.551000 N Lon: 67 21.549000 W	COG: 81.0 deg SOG: 1.00 kmt Spd: -0.10 kmt	12 kHz: 215.90 meters 3.5 kHz: 0.00 meters
SnapShot#0585 View: <u>TimeSeries</u>	Plots	SSTMP: 6.0380 degC SSCND: 31.2464 mmho/cm Salinity: 31.4617 psu	AirTemp: 5.76 degC BarPres: 1015.67 millibar	R/*	/ Oceanus OC412-1
Sum	maries	Fluor: 175.04 may	RelH: 81.15 %		\sim
Plots:	<u>24Hr</u> <u>7Day</u> <u>Cruise</u> <u>Nav</u>		WndSpd: 7.91 m/s WndDir: 272.4 deg	44	
Statistics:	<u>24Hr</u> <u>7Day</u> <u>Cruise</u>	Type: ASNAP EType: Even	t:	> 43.5	
View:	<u>CruiseInfo</u> <u>DataDict</u> <u>Events</u> <u>R/T Display</u>			43	
Proofsheets:	<u>Video1</u> <u>Video2</u>	Video Src 1:	Video Src2:	-68.5 -6	8° –67.5 –67
DownLoad:	<u>DailyCSV</u> <u>DailyStats</u>				

Ship Data – Multi-Variable Plots

R/V Oceanus ShipData CruiselD: OC412-1

May: 07 08 09 10 11 12 13 14 15 16 17 18 00 01 02 03 04 05 06 07 08 09 10 Hour: 11 12 13 14 15 16 17 18 19 20 21 22 23 I 44 44 44 44 SnapShot#0585 TimeSeries Plots...

 Summaries

 Plots:
 24Hr
 7Day

 Cruise
 Nav

 Statistics:
 24Hr
 7Day

 Cruise
 Organise
 Organise

 View:
 CruiseInfo
 DataDict
 Events

 R/T
 Display
 Video1
 Video2

DownLoad:

DailyCSV



Ship DataGrabber – User Options

R/V Atlantis: Underway Ship Data CruiseID: <u>AT11-16</u>

- <u>Real-Time Data Display</u>
 Interactive Data Viewer
- AT11-16 Ship DataGrabber
- Event Logger
 - Other Cruises

Ship DataGrabber – Event Logger

TCP Port: 5008 CfgFile: Ship.cfg V Source: V Setup Category CTD.ops Core.ops Dredge.ops Ship.ops SRV.event	Observation In Water At 100m Start Acquisition Stop Acquisition Bottom of Cast
LockTarget Target: Event:	Start New File At Surface

Web-Based Event Logger System

Ship DataGrabber – Event Logger

Event Logger Setup	Edit File:/Cfg/Ship.cfg	
Edit Category/Observation Cfg File <u>Default.cfg</u> 	# # Comments begin with # and will not show up in the web-form list. #	^
 <u>H2O.cfg</u> <u>Jason.cfg</u> 	# History: # Date Who Description	
• <u>Ship.cfg</u>	<pre>#</pre>	
<u>Create</u> new configuration file <u>Delete</u> existing config file	# 2006/09/21 SL Added user-defined parameters (v3.0) #	
Restore: <u>Default.cfg</u>	<pre>#User-Defined Parameters (comment-out for default values) _TCP_port = 5008 _EvtTableWidth = 600</pre>	
Edit Source Name List	_ObsListSize = 11 _UseCategoryButtons = 1	
• <u>Default.src</u>	_NumCategoryCols = 4 # #	
View: <u>Readme</u>	<pre>#Define catagory name and semi-colon separated observations CTD.ops = In Water;At 100m;Start Acquisition;Stop Acquisition;Bo Core.ops = In Water;At 100m;Core at Bottom;Core coming up;At Surf</pre>	>
Refresh Page	Dredge.ops= In Water;At 100m;Dredge at Bottom;Dredge coming up;AtShip.ops= In Port;Transit;On Station;Visibility Good;VisibilitySRV.event= START Launch; Vehicle in Water; Recovering Vehicle	
	S 100 S	*
	Reset Update	

Event Logger - User Configurable

Ship Data-Grabber – Shore Server

WHOI Ship Data-Grabber System

Overview Ship Data Architecture User Interface Documentation



This website and contents copyrighted (c) 2004-2005 Woods Hole Oceanographic Institution. All rights reserved.

URL: www.whoi.edu and click-on 'Digital Data Center'

ShipData – R/V Oceanus





From menu on left, select year and cruiselD or press <u>Custom...</u> for more search options

ShipData – Cruise Info/Metadata



R/V Oceanus	*
View Oceanus	

Sel	ect D	isplay	Output
۲	Info	•	ShipTrack

CruiseID
By Year <u>Custom.</u>
v 2006
<u>OC429</u>
<u>OC428</u>
OC427
OC426
OC425
OC424-2
OC424-1
OC423
OC422
OC421
2005
2004
Related Links
View: Cruise Summar

Cruise Info CruiseID: OC429 Captain: Capt. Lawrence Bearse Chief Sci: John Kemp Woods Hole Location: New Jersey Shelf DeparturePort: Woods Hole ArrivePort: Woods Hole StartTime: 2006/09/07 11:10:32 EndTime: 2006/09/12 13:40:25 View Ship Track Image

Underway Data Collected

Sensors: depth12, depth35, air temp, dec lat, dec lon, ssend, sstmp, gps cog, gps sog, gyro, imet bpr, imet swr, prc, hrh, sbe45c, sbe45s, sbe45t, sbe45v, salinity, fluorometer, spd, wnd dir, wnd spd View: DataViewer, SDG, QuickPlots

Bathymetry Data Collected

Other Data Viewers

CTD Viewer

Download Archived Data...

Mon Oct 16 16:03:12 2006 EST Mon Oct 16 20:03:12 2006 GMT

R/V Oceanus CruiseID: OC429 Location: New Jersev Shelf

Synopsis

The main scientific research objective is the recovery of subsurface moorings. The planned activities include multiple mooring recoveries. The operations area will be off the New Jersey coast in the vicinity of 39o 10'N, 73o 00'W.



Event Summary:		0 CTDs, 0 Cores, 0 Dredges, 0 XBTs		
CTD	Station	Latitude	Longitude	TimeStamp
Core	Station	Latitude	Longitude	TimeStamp
Dredge	e Station	Latitude	Longitude	TimeStamp
VBT	Station	Tatitude	Longitude	TimeStamp

ShipData – Cruise Ship Track



ShipData – Cruise Info/DataViewer



mp Data 595	
R/V Oceanus	×
/iew Oceanus	

Select Display Output Info ShipTrack
CruiseID
By Year <u>Custom</u>
▼ 2006
OC429
OC428
OC427
OC426
OC425
OC424-2
OC424-1
OC423
OC422
OC421
2005
2004
Related Links
Related LITKS
View: Cruise Summary Lis Goto: ShipData Home

Cruise Info CruiseID:

OC429 Captain: Capt. Lawrence Bearse Chief Sci: John Kemp Woods Hole Location: New Jersey Shelf DeparturePort: Woods Hole ArrivePort: Woods Hole StartTime: 2006/09/07 11:10:32 EndTime: 2006/09/12 13:40:25 View Ship Track Image

Underway Data Collected

Sensors: depth12, depth35, air_temp, dec_lat, dec_lon, sscnd, sstmp, gps_cog, gps_sog, gyro, imet_bpr, imet_swr, prc, hrh, sbe45c, sbe45s, sbe45t, sbe45v, salinity, fluorometer, spd, wnd_dir, wnd_spd DataViewer, SDG, QuickPlots

Bathymetry Data Collected

Other Data Viewers

CTD Viewer

Download Archived Data...

Mon Oct 16 16:03:12 2006 EST Mon Oct 16 20:03:12 2006 GMT

R/V Oceanus CruiseID: OC429 Location: New Jersey Shelf

Synopsis

The main scientific research objective is the recovery of subsurface moorings. The planned activities include multiple mooring recoveries. The operations area will be off the New Jersey coast in the vicinity of 39o 10'N, 73o 00'W.



Event Summary:		0 CTDs, 0 Cores,		
CTD	Station	Latitude	Longitude	TimeStamp
Core	Station	Latitude	Longitude	TimeStamp
Dredge	Station	Latitude	Longitude	TimeStamp
XBT	Station	Latitude	Longitude	TimeStamp

ShipData – Interactive Data Viewer



ShipData – Cruise Info/SDG Viewer



mp Data Syst	CIII
R/V Oceanus	*
/iew Oceanus	

Select Display Output Info ShipTrack
CruiseID
By Year <u>Custom</u>
▼ 2006
OC429
OC428
OC427
OC426
OC425
OC424-2
OC424-1
00423
00420
00422
00421 N 2005
2005
2004
Related Links
View: Cruise Summary Lis Goto: ShipData Home

Cruise Info CruiseID: OC429 Captain: Capt. Lawrence Bearse Chief Sci: John Kemp Woods Hole Location: New Jersey Shelf DeparturePort: Woods Hole ArrivePort: Woods Hole StartTime: 2006/09/07 11:10:32 EndTime: 2006/09/12 13:40:25 View Ship Track Image

Underway Data Collected

Sensors: depth12, depth35, air_temp, dec_lat, dec_lon, sscnd, sstmp, gps_cog, gps_sog, gyro, imet_bpr, imet_swr, prc, hrh, sbe45c, sbe45s, sbe45t, sbe45v, salinity, fluorometer, spd, wnd_dir, wnd_spd View: DataVier SDG, QuickPlots

Bathymetry Data Collected

Other Data Viewers

CTD Viewer

Download Archived Data...

Mon Oct 16 16:03:12 2006 EST Mon Oct 16 20:03:12 2006 GMT

R/V Oceanus CruiseID: OC429 Location: New Jersey Shelf

Synopsis

The main scientific research objective is the recovery of subsurface moorings. The planned activities include multiple mooring recoveries. The operations area will be off the New Jersey coast in the vicinity of 39o 10'N, 73o 00'W.



Event Summary:		0 CTDs, 0 Cores,		
CTD	Station	Latitude	Longitude	TimeStamp
Core	Station	Latitude	Longitude	TimeStamp
Dredge	Station	Latitude	Longitude	TimeStamp
XBT	Station	Latitude	Longitude	TimeStamp

Ship Data – Integrated Display

R/V Oceanus ShipData CruiselD: OC412-1

May: 07 08 09 10 11 12 13 14 15 16 17 18 00 01 02 03 04 05 06 07 08 09 10 Hour: 11 12 13 14 15 16 17 18 19 20 21 22 23		To view a specific TimeSeries plot, click on a variable name			
		DAQTime: 2005/05/14 00:10:38 DataTime: 2005/05/14	Gyro: 149.2 deg Lat: 43 40.551000 N Lon: 67 21.549000 W	COG: 81.0 deg SOG: 1.00 kmt Spd: -0.10 kmt	12 kHz: 215.90 meters 3.5 kHz: 0.00 meters
SnapShot #0585 View: TimeSeries Plots		SSTMP: 6.0380 degC SSCND: 31.2464 mmho/an Salinity: 31.4617 psu	AirTemp: 5.76 degC BarPres: 1015.67 millibar	R/*	/ Oceanus OC412-1
Sum	maries	Fluor: 175.04 may	RelH: 81.15 %		\sim
Plots:	<u>24Hr</u> <u>7Day</u> <u>Cruise</u> <u>Nav</u>		WndSpd: 7.91 m/s WndDir: 272.4 deg	44	
Statistics:	<u>24Hr</u> <u>7Day</u> <u>Cruise</u>	Type: ASNAP EType: Even	t:	> 43.5	
View:	<u>CruiseInfo</u> <u>DataDict</u> <u>Events</u> <u>R/T Display</u>			43	
Proofsheets:	<u>Video1</u> <u>Video2</u>	Video Src 1:	Video Src2:	-68.5 -6	8° –67.5 –67
DownLoad:	<u>DailyCSV</u> <u>DailyStats</u>				

R/V Oceanus ShipData View: Home CruiseList Select Display Type • Info • ShipTrack • ShipData • Interactive Plots CruiseID by Year • 2005 • 2004 • Related Links <u>Current Ship Location</u> <u>Scientific Instrument Desc</u> <u>Scientific Navigation Desc</u> <u>Geographical Cruise Viewer</u> <u>Detail Cruise Synopses</u> <u>Ship Data-Grabber System</u> WHOI Research Vessels



R/V Oceanus ShipData

View: Home CruiseList

Select Display Type

💿 Info 🛛 💿 ShipTrack

🔍 ShipData 🔍 Interactive Plots

CruiseID by Year 2005

- > 2004
- Related Links

Current Ship Location Scientific Instrument Desc Scientific Navigation Desc Geographical Cruise Viewe Detail Cruise Synopses Ship Data-Grabber System WHOI Research Vessels

Scientific Instrumentation

Navigation displays, winch readouts, meteorological readings in principal laboratory spaces

Ship parameter data logging and display system (Athena) with Ethernet, video and R8232 data distribution capability

Uncontaminated salt water distribution system

Bathymetric systems (3.5 kHz and 12.0 kHz)

- Knudsen 320B/R with digital data logging and EPC graphic recorder
- · Edo 323 B 12 kHz transducer
- Array of 12 3.5 kHz transducers

SBE 911+ Deck Unit and CTD Rosette equipped with 24 ea. 10-liter Niskin bottles (see WHOI Standard CTD Package)

XBT: Sippican MK 12 with 386 PC (2 ea.)

Hand-held and deck launchers

RDI 150 kHz Acoustic Doppler Current Profiler (ADCP)

Ashtech GPS position, ship heading & attitude sensors

TeraScan satellite receiver

IMET meterological sensor system (IMET tower diagram) • Wind speed and direction

- Air temperature
- · Barometric pressure
- Relative humidity
- · Short wave solar radiation
- · Sea surface temperature
- Precipitation

GPS-based precision clock

R/V Oceanus ShipData

View: Home CruiseList

Select Display Type

💿 Info 🛛 🔍 ShipTrack

🔍 ShipData 🔍 Interactive Plots

CruiseID by Year 2005

2004

Related Links

Current Ship Location Scientific Instrument Desc Scientific Navigation Desc Geographical Cruise Viewer Detail Cruise Synopses Ship Data-Grabber System WHOI Research Vessels

The vessel is equipped with the following navigation devices:

GPS Satellite Navigation Northstar 951 WAAS/GPS receiver Furuno GP90D WAAS/dGPS receiver P-Code GPS receiver Northstar 800/X Loran C/GPS

All units are located on the bridge and are operated by the ship's watch officer.

The Northstar 951 and Furuno GP90D receivers are the primary navigation devices for the ship. The Furuno unit is equipped with a differential beacon receiver (d-GPS). In addition to the visual display in the chart room, the units output a data stream to the science data logger for remote display, logging and redistribution to science user devices. All standard NEMA GPS data are available. Typical data provided are Time, Position, Velocity, Course-Over-Ground and Speed-Over-Ground.

Gyro Compass	(2) Sperry MK-37 gyro compass systems
Speed Log	Sperry Marine SRD-301 Doppler
Radars	Furuno S-Band with ARPA Furuno X-Band with ARPA
Direction Finder	Taiyo TD-L1620 VHF
Fathometer	Furuno FE-880 50 KHz (Ship Use)

WHOI Research Vessels



Ship Data-Grabber Summary

- RV Atlantis RV Knorr RV Oceanus RV Tioga
- ✓ Operational 2005-2006
 - Deployed on R/V Atlantis, Knorr, Oceanus, Tioga (50+ Cruises)
 - Integrated Ship Data, Instrument Data, and Map displaying current position. Video displays when available.
 - Web-based Interactive Data Plots for quick Q/A
 - On-Shore Web-Server Repository Setup
- *∝* Future
 - Provide links to complete on-line datasets
 - Incorporate real-time data from ships (similar to SW06 experiment)
 - Expand event logging system and ship operations for CTDs, Cores, Dredges
 - Develop automatic data catalog and meta-data summary reports