

MEAMission Report

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Mission Metadata	
AVCL Mission File	MEAMission.xml
Mission Statement	Mission Execution Automaton (MEA) test mission to demonstrate strategic-level operations including path planning, avoidance-area constraints, search, and success-failure goal sequencing.
Identity information	
Location	MOVES Institute, Naval Postgraduate School, Monterey California USA
Personnel	Don Brutzman, Duane Davis, Terry Norbraten, Bob McGhee
Test/report author	Don Brutzman
Live/virtual	Virtual
Environment	
Estimated sea state	0
Estimated current set, drift	0
Estimated wind direction, speed	0
Estimated navigational fix accuracy	no errors
Test objectives	
Mission	Confirm proper operation of AUV Workbench while performing a canonical strategic-level mission of goals, obstacles and constraints
Software	NPS AUV Workbench
Conclusions and recommendations	

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AVCL Mission Header	
title	MEAMission.xml
mission	MEAMission.xml
description	AVCL mission generated by the AUV Workbench
created	29 March 2011
revised	18 November 2012

AVCL Mission Header	
creator	Don Brutzman, Duane Davis, Bob McGhee
MissionMetadata	MEAMission.MissionMetadata.xml
generator	AUV Workbench https://savage.nps.edu/AuvWorkbench
identifier	http://TODO insert persistent url path here/MEAMission.xml
missionOffsetDeltaNorth	0
missionOffsetDeltaEast	0

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AVCL Mission Details	
Vehicle Type	UUV
Vehicle Name	UUV
Vehicle ID	0
Units of Measure	
Angle	degrees
Distance	meters
Mass	kilograms
Time	seconds
Geographic Origin	
Latitude	36.606998443603516
Longitude	-121.88500213623047
Time Units	
Start Time	26 December 2012 21:5:17
Time Zone	8
Sample Time Interval	17 seconds

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AVCL Mission Commands

AVCL Mission Command List: MEAMission.xml					
#	Command	X Position	Y Position	Z Position	Description
0	LaunchPosition	450.0	-460.0		Start point

AVCL Mission Command List: MEAMission.xml					
#	Command	X Position	Y Position	Z Position	Description
1	RecoveryPosition	550.0	-400.0		Finish point
	Goal List	id	nextOnSucceed	nextOnFail	
2	Search	goalA	goalB	goalC	search operating area A
	datumType=area, requiredPD=0.8, singleTarget=false				
	Operating Area: Rectangle, duration=3000.0 seconds				
3	SampleEnvironment	goalB	goalC	(Recovery Point)	sample operating area B
	Operating Area: Rectangle, duration=3000.0 seconds				
4	Search	goalC	(Recovery Point)	goalD	search trapezoidal polygon area C
	datumType=point, requiredPD=0.8, singleTarget=true				
	Operating Area: Polygon, duration=3000.0 seconds				
5	Rendezvous	goalD	(Recovery Point)	(Recovery Point)	rendezvous area D
	description=rendezvous with vehicle 2				
	Operating Area: Circle, duration=3000.0 seconds				
	Constraint List	id			
6	AvoidArea	AvoidAreaLaunch			Launch obstacle before goalA
	Avoidance Area: Rectangle, duration= seconds				
Reference: Autonomous Vehicle Control Language (AVCL)					

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Screen Snapshots

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Figure 1	OpenMapView
Figure 2	MeaMission0Launch
Figure 3	MeaMission1Transit
Figure 4	MeaMission2Search
Figure 5	MeaMission3Transit
Figure 6	MeaMission4Search
Figure 7	MeaMission5Transit
Figure 8	MeaMission6Search
Figure 9	MeaMission7RendevousGoalFails
Figure 10	MeaMission8Transit
Figure 11	MeaMission9MissionComplete
Figure 12	MeaMission10CompletionCloseup

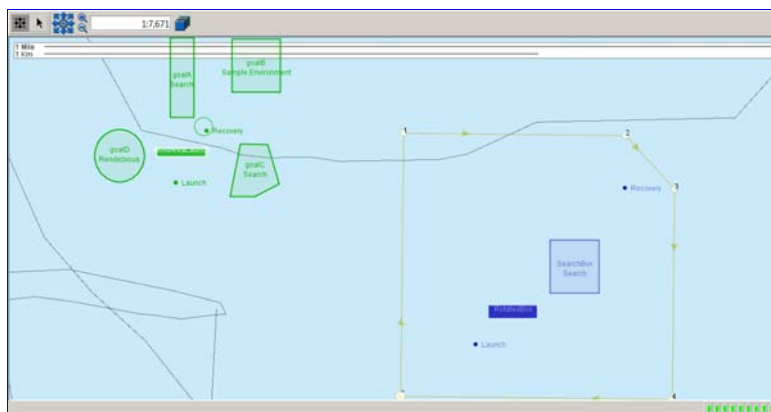


Figure 1: Resulting mission image from OpenMapView

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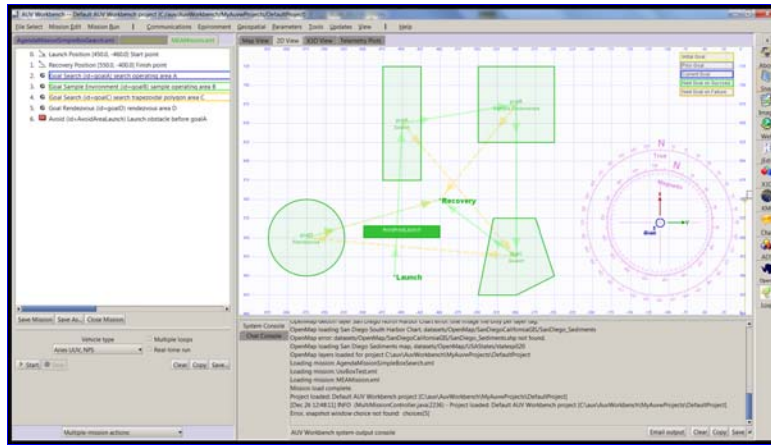


Figure 2: Resulting mission image from MeaMission0Launch

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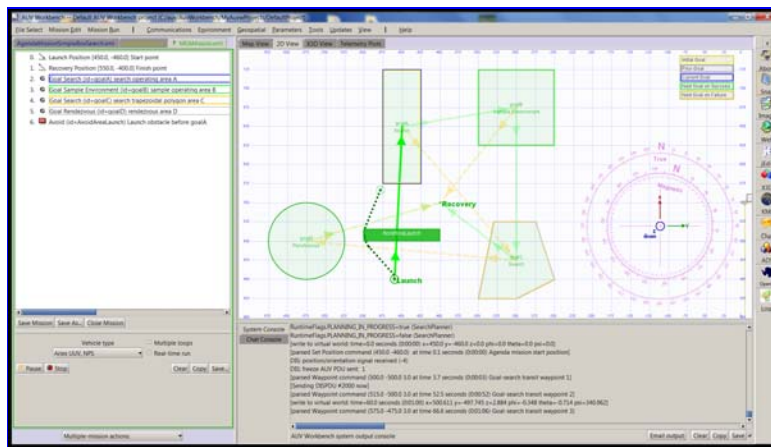


Figure 3: Resulting mission image from MeaMission1Transit

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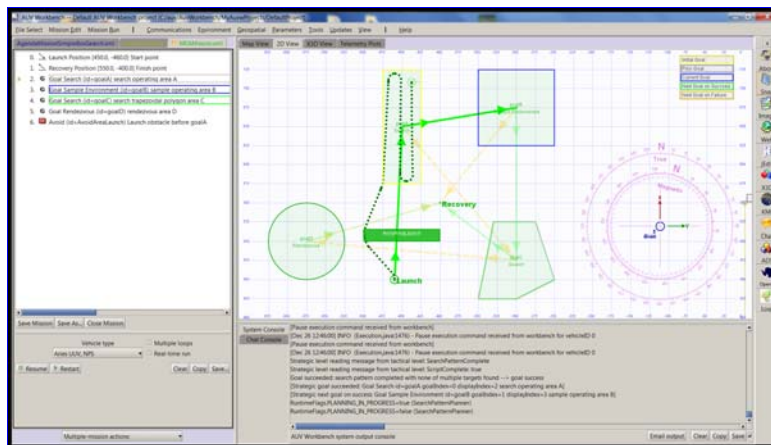


Figure 4: Resulting mission image from MeaMission2Search

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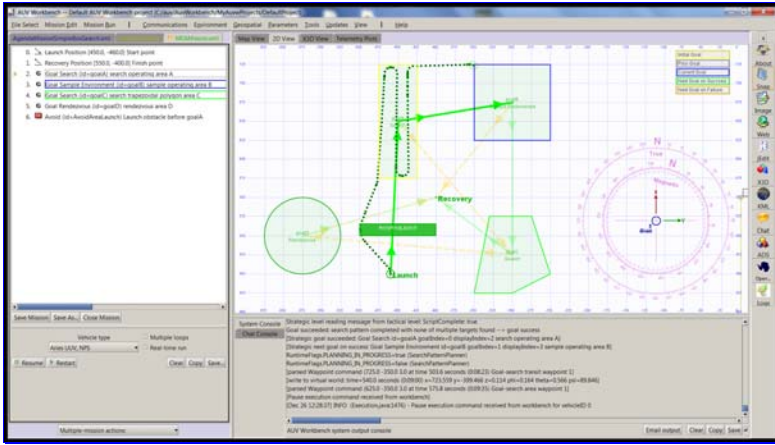


Figure 5: Resulting mission image from MeaMission3Transit

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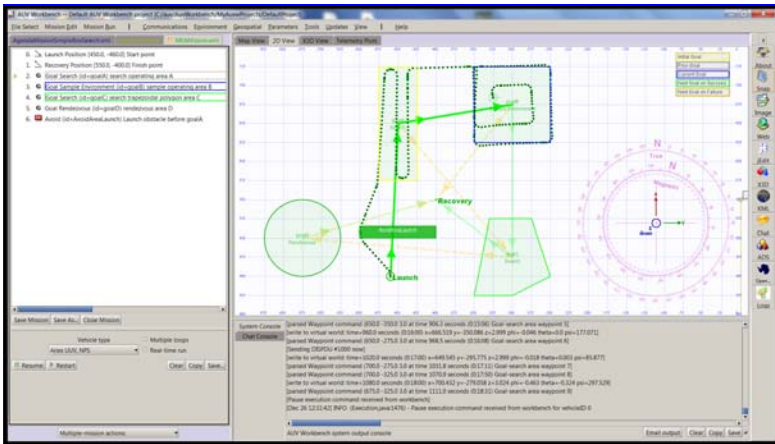


Figure 6: Resulting mission image from MeaMission4Search

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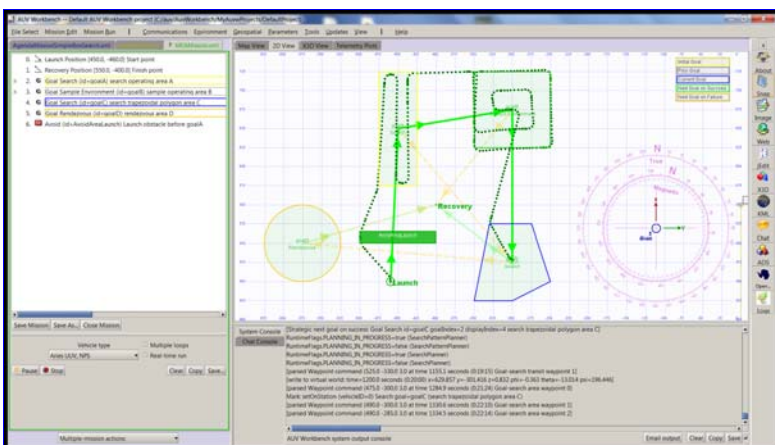


Figure 7: Resulting mission image from MeaMission5Transit

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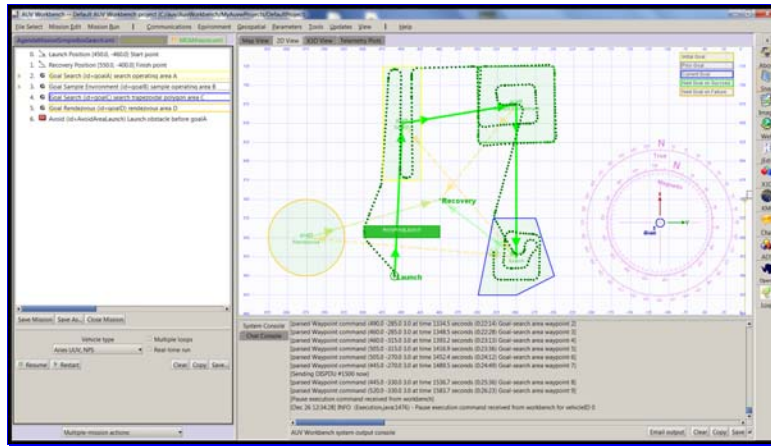


Figure 8: Resulting mission image from MeaMission6Search

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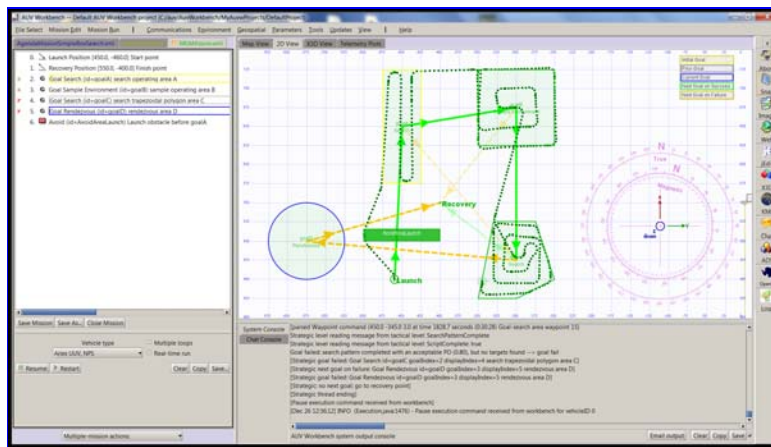


Figure 9: Resulting mission image from MeaMission7RendevousGoalFails

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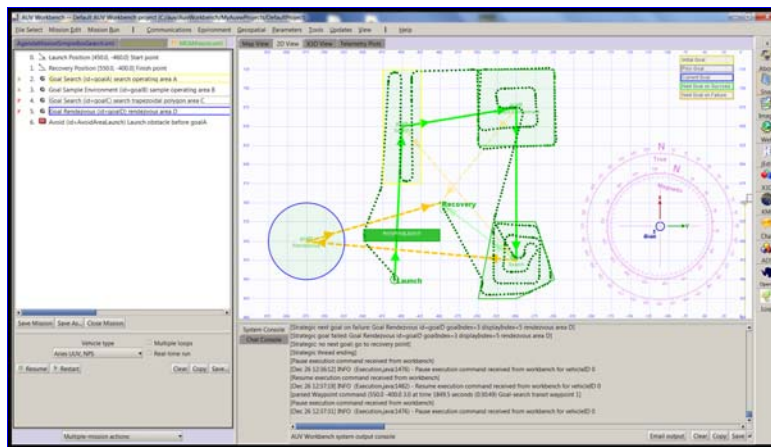


Figure 10: Resulting mission image from MeaMission8Transit

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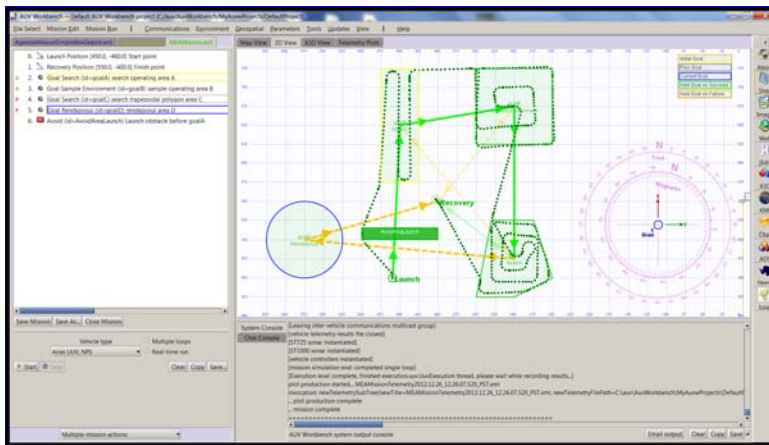


Figure 11: Resulting mission image from MeaMission9MissionComplete

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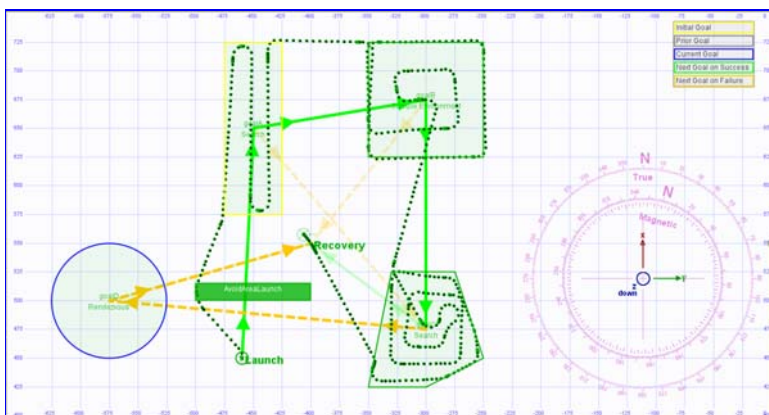


Figure 12: Resulting mission image from MeaMission10CompletionCloseup

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Mission Telemetry Plot Charts

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Figure 13	chartXy	description
Figure 14	chartXyz	description
Figure 15	chartZ	description
Figure 16	chartOrientations	description
Figure 17	chartLinearVelocities	description
Figure 18	chartRotationalVelocities	description
Figure 19	chartPropellers	description
Figure 20	chartRudder	description
Figure 21	chartPlaneSurfaces	description
Figure 22	chartBodyThrusters	description

Figure 23	chartLateralThrustersCourse	description
Figure 24	chartVerticalThrustersDepth	description
Figure 25	chartRemainingBatteryPower	description



Figure 13: Telemetry plot chartXy ([description](#))

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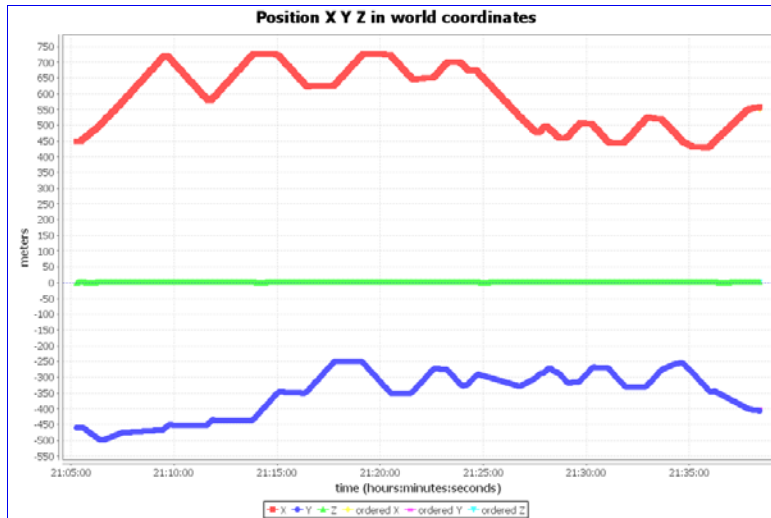


Figure 14: Telemetry plot chartXyz ([description](#))

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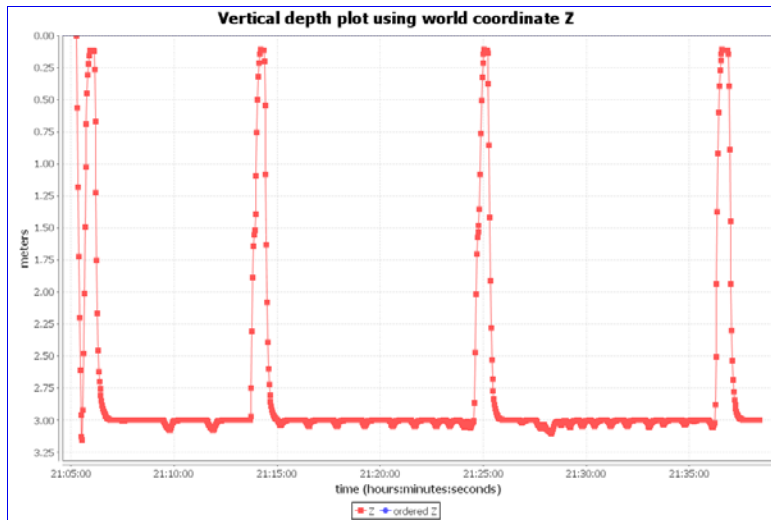


Figure 15: Telemetry plot chartZ ([description](#))

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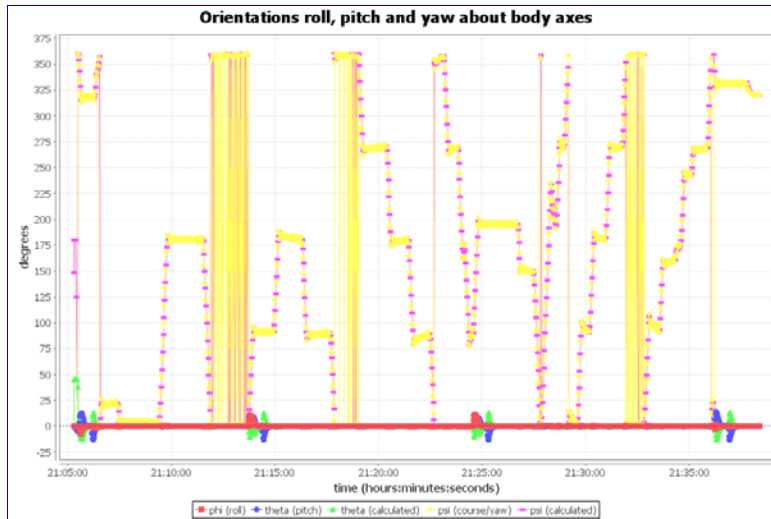


Figure 16: Telemetry plot chartOrientations ([description](#))

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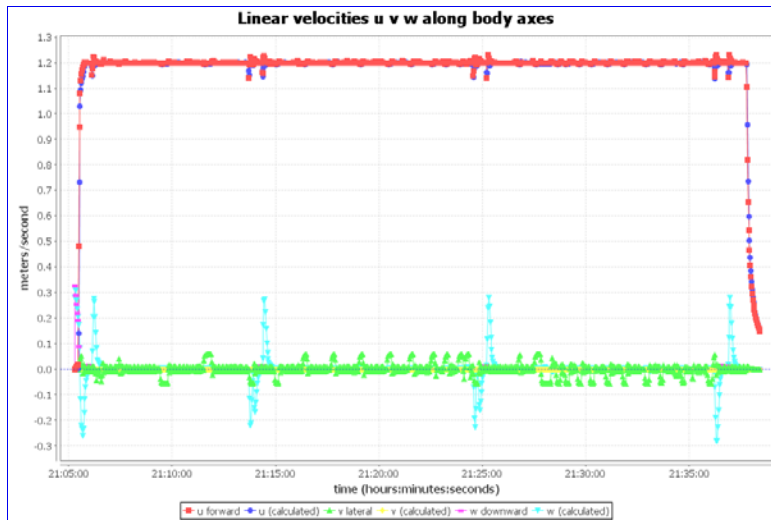


Figure 17: Telemetry plot chartLinearVelocities ([description](#))

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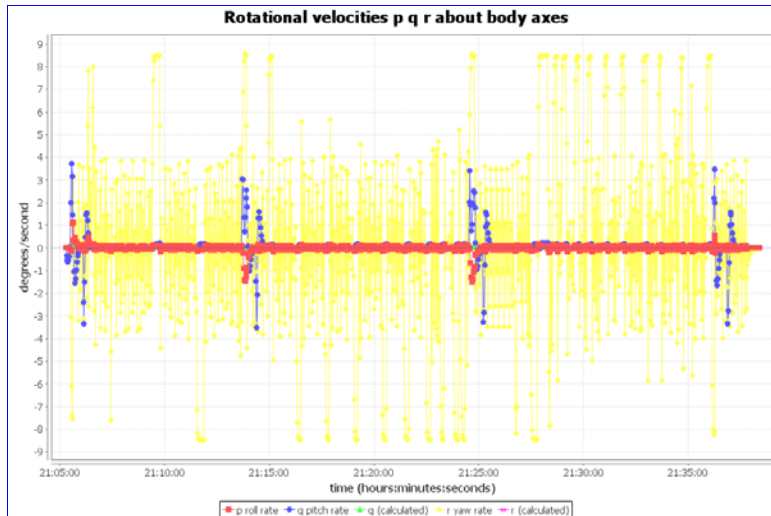


Figure 18: Telemetry plot chartRotationalVelocities ([description](#))

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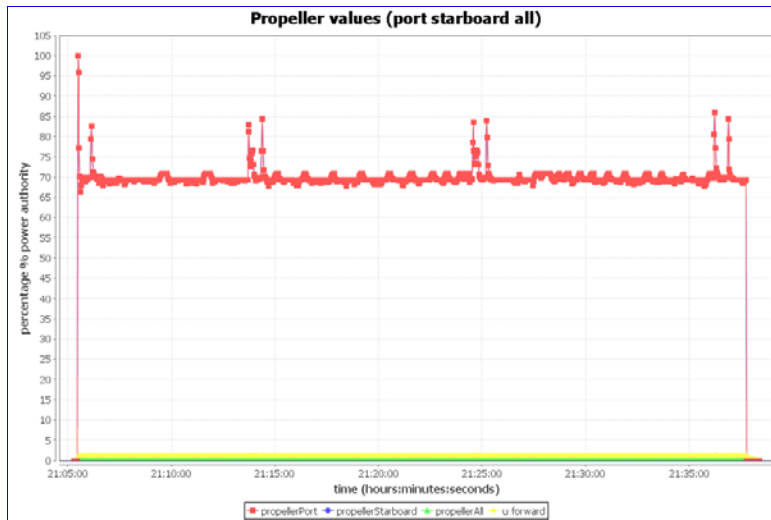


Figure 19: Telemetry plot chartPropellers ([description](#))

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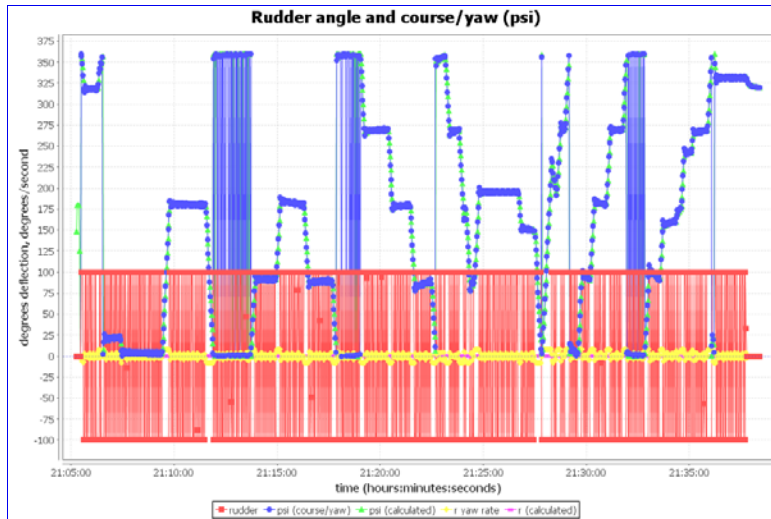


Figure 20: Telemetry plot chartRudder ([description](#))

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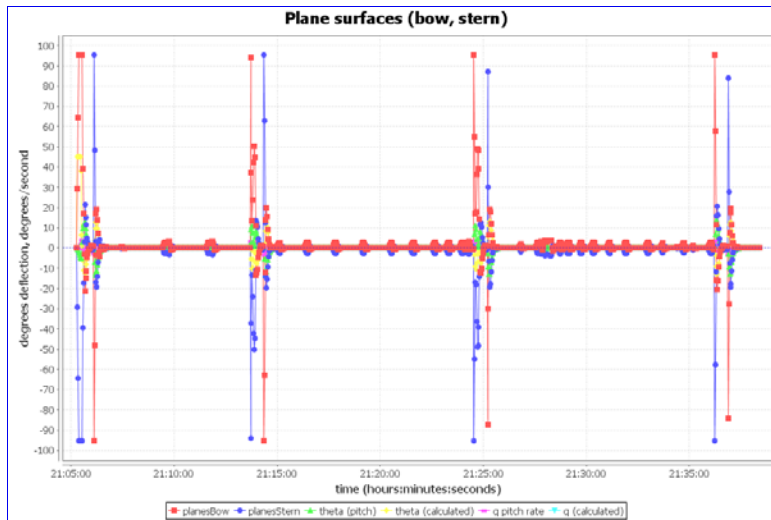


Figure 21: Telemetry plot chartPlaneSurfaces ([description](#))

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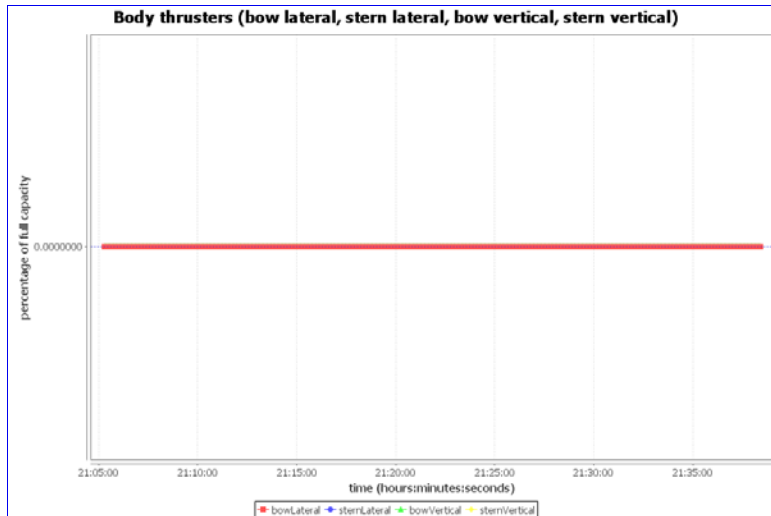


Figure 22: Telemetry plot chartBodyThrusters ([description](#))

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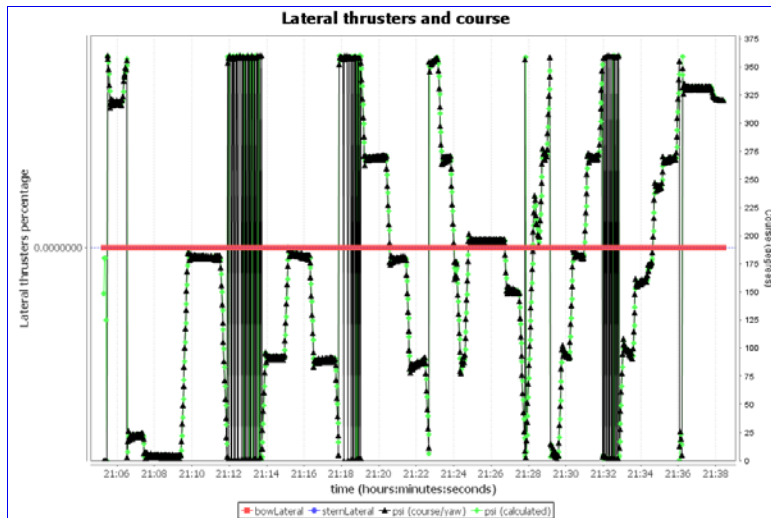


Figure 23: Telemetry plot chartLateralThrustersCourse ([description](#))

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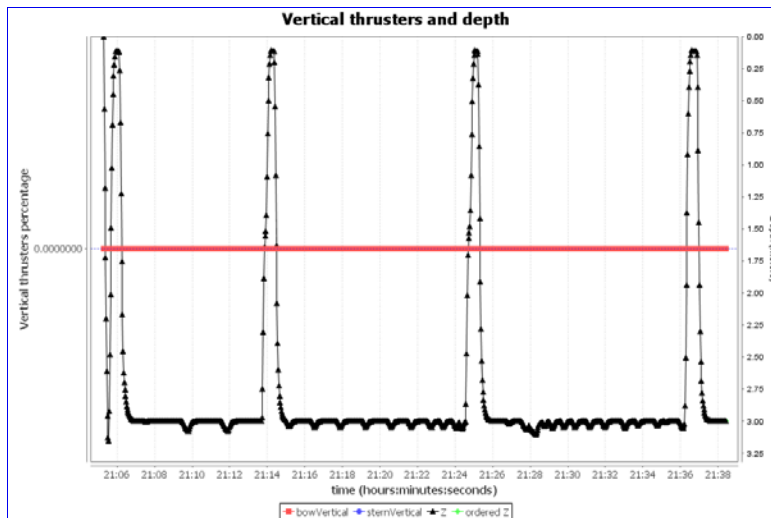


Figure 24: Telemetry plot chartVerticalThrustersDepth ([description](#))

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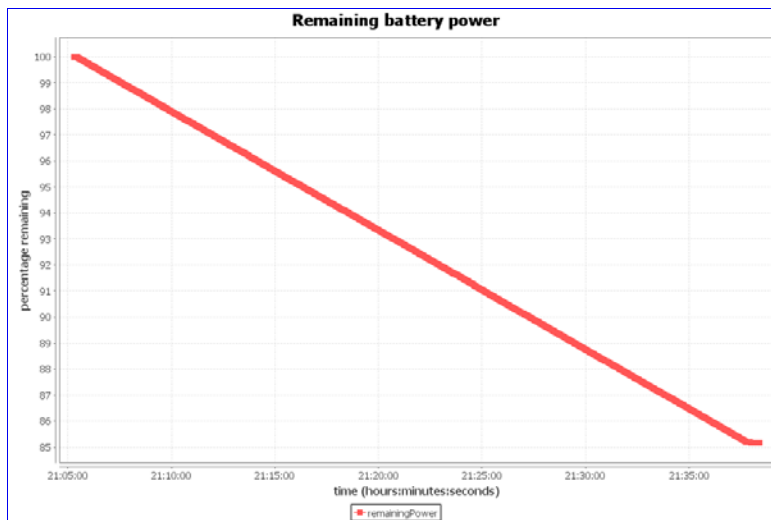


Figure 25: Telemetry plot chartRemainingBatteryPower ([description](#))

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Credits

This report was generated by the [Autonomous Unmanned Vehicle \(AUV\) Workbench](#), an open-source tool for robot-mission planning, rehearsal, execution, and playback visualization. Available online at <https://savage.nps.edu/AuvWorkbench>.

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