UavWaypointMission Report

Mission Metadata | AVCL Header | AVCL Mission Details | AVCL Mission Commands | Screen Snapshots | Telemetry Plots | Credits

Mission Metadata	
AVCL Mission File	UavWaypointMission.xml
Mission Statement	Test mission for UAV waypoint commands
Identity information	
Location	Monterey Bay California USA
Personnel	Actual airborne UAV operations are typically not allowed in U.S. civilian airspace due to Federal Aviation Administration (FAA) regulations.
Live/virtual	Virtual demonstration test
Environment	
Estimated wind direction, speed	0 0
Test objectives	
Mission	Demonstrate various AVCL commands for UAV missions
Conclusions and recommendations	
Conclusions	This is a good test example.
Recommendations for future work	Connect more models from Savage X3D archive into AUV Workbench, and also add support for additional vehicle control laws and aerodynamics coefficients.

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AVCL Mission Header	
description	Unamanned air vehicle (UAV) AVCL mission generated by the AUV Workbench
created	1 September 2004
modified	28 August 2010
title	UavWaypointMission.xml
mission	UavWaypointMission.xml
creator	Duane Davis, Don Brutzman
MissionMetadata	UavWaypointMission.MissionMetadata.xml
reference	UavWaypointMissionReport.pdf
generator	AUV Workbench https://savage.nps.edu/AuvWorkbench

AVCL Mission Header	
identifier	http://xmsf.svn.sourceforge.net/viewvc/xmsf/trunk/AuvWorkbench/MyAuvwProjects/DefaultProject/missions/UavWaypointMission.xml
missionOffsetDeltaNorth	0
missionOffsetDeltaEast	0

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AVCL Mission Details	
Vehicle Type	UAV
Vehicle Name	Predator
Vehicle ID	3
Units of Measure	
Angle	degrees
Distance	meters
Mass	kilograms
Time	seconds
Geographic Origin	
Latitude	47.685001373291016
Longitude	-122.61000061035156
Time Units	
Start Time	26 September 2012 16:9:23
Time Zone	-1
Sample Time Interval	12 seconds

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AVCL Mission Commands

AVCL Mission Command List: UavWaypointMission.xml

#	Command	X Position	Y Position	Z Position	Description
0	MakeKnots			50.0	Set speed
1	SetPositionUAV	0.0	0.0		Start point
2	WaypointUAV	3000.0	0.0		Northwest corner

AVCL Mission Command List: UavWaypointMission.xml					
#	Command	X Position	Y Position	Z Position	Description
3	WaypointUAV	3000.0	1500.0		
4	WaypointUAV	250.0	1500.0		
5	WaypointUAV	250.0	2500.0		
6	WaypointUAV	3000.0	2500.0		
7	WaypointUAV	3000.0	3000.0		Northeast corner
8	WaypointUAV	-250.0	3000.0		Southeast corner
9	WaypointUAV	-250.0	500.0		
10	WaypointUAV	1500.0	500.0		
11	WaypointUAV	1500.0	2000.0		Near center, spiral back out
12	WaypointUAV	2750.0	2000.0		
13	WaypointUAV	2750.0	1000.0		
14	WaypointUAV	250.0	1000.0		
15	WaypointUAV	-250.0	0.0		Southwest corner
16	WaypointUAV	-0.0	0.0		Finish point near start point
17	Quit				
Reference: Autonomous Vehicle Control Language (AVCL)					

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Screen Snapshots

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Figure 1	2DMissionView
Figure 2	3DSceneView

Figure 3	OpenMapView

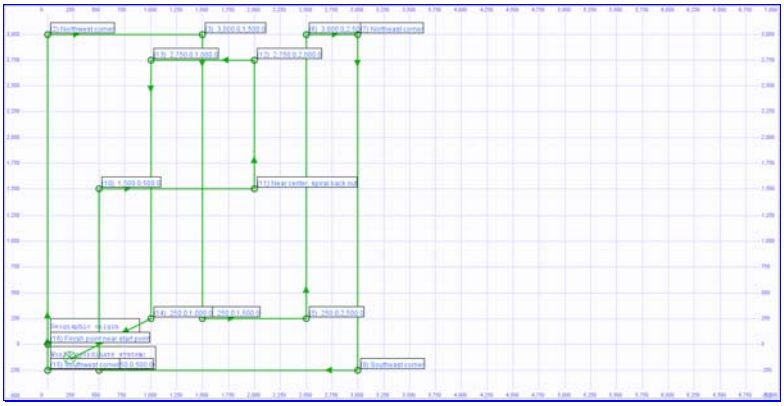

Figure 1: Resulting mission image from 2DMissionView

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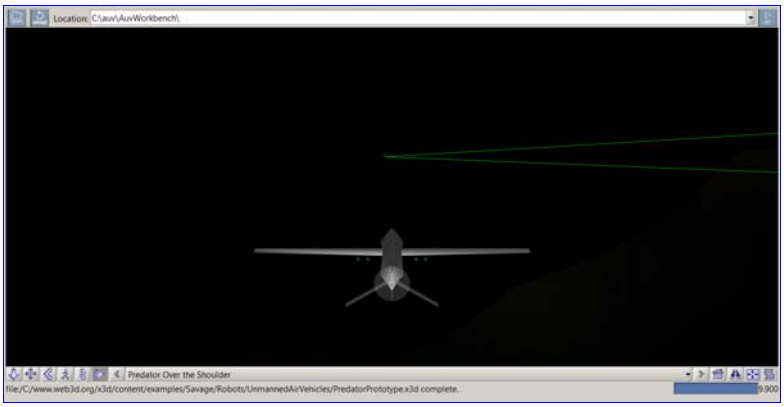

Figure 2: Resulting mission image from 3DSceneView

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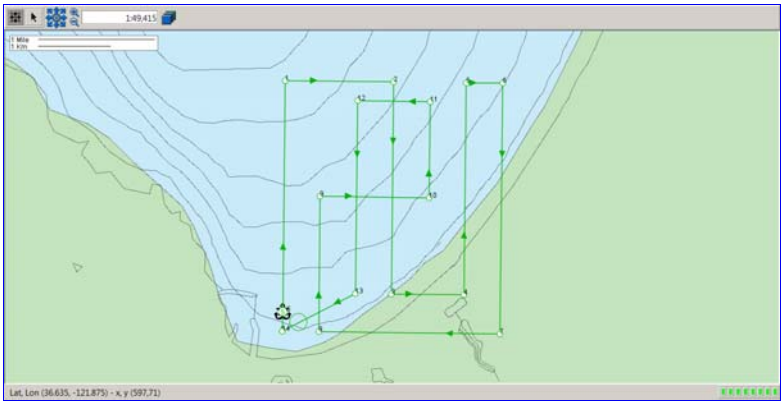

Figure 3: Resulting mission image from OpenMapView

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Mission Telemetry Plot Charts

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Figure 4	chartXy	description
Figure 5	chartXyz	description
Figure 6	chartZ	description
Figure 7	chartOrientations	description
Figure 8	chartLinearVelocities	description
Figure 9	chartRotationalVelocities	description
Figure 10	chartPropellers	description
Figure 11	chartRudder	description
Figure 12	chartPlaneSurfaces	description
Figure 13	chartBodyThrusters	description
Figure 14	chartLateralThrustersCourse	description
Figure 15	chartRemainingBatteryPower	description

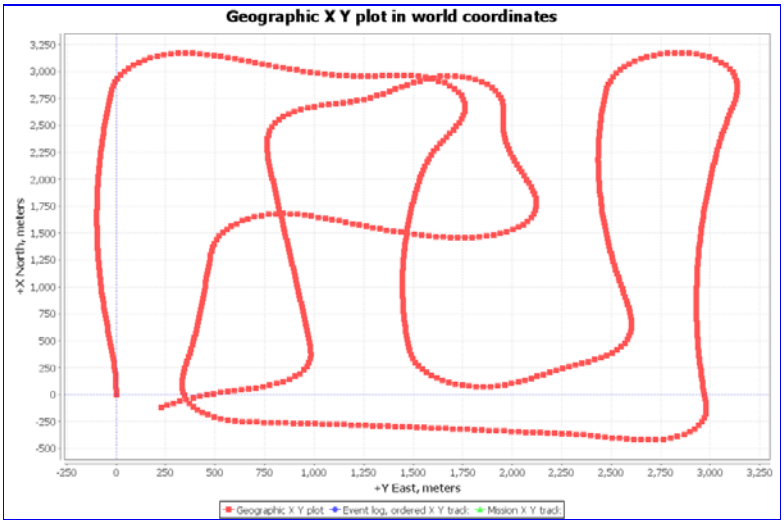

Figure 4: Telemetry plot chartXy (description)

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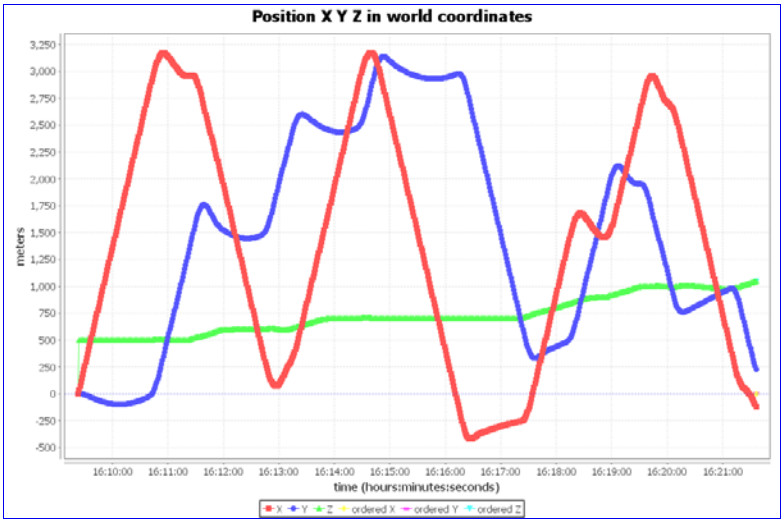

Figure 5: Telemetry plot chartXyz (description)

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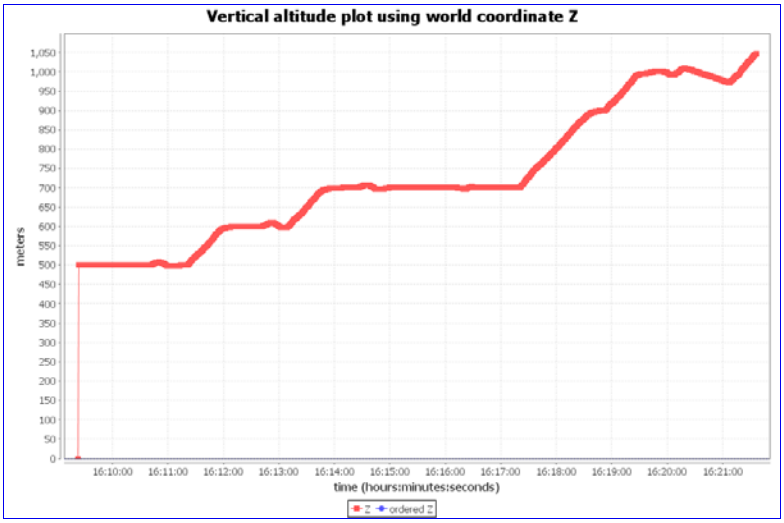

Figure 6: Telemetry plot chartZ (description)

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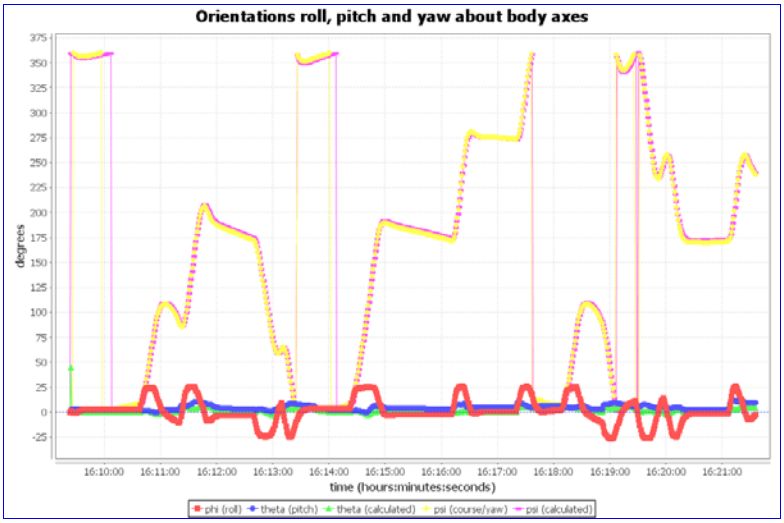

Figure 7: Telemetry plot chartOrientations (description)

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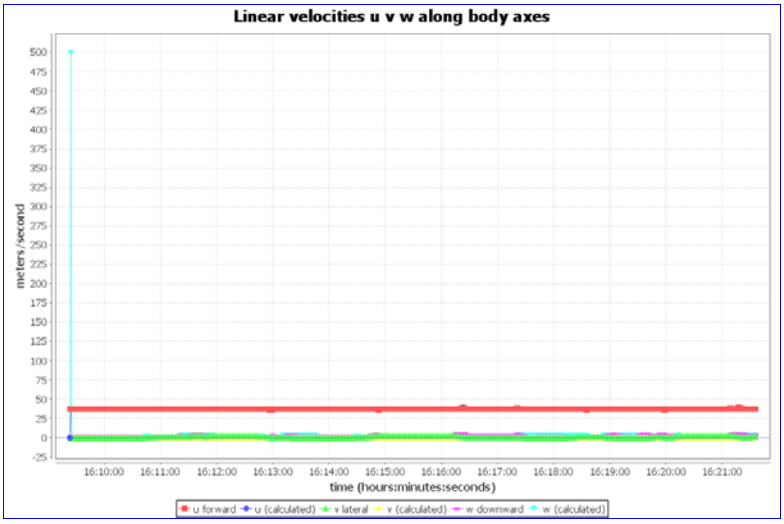

Figure 8: Telemetry plot chartLinearVelocities (description)

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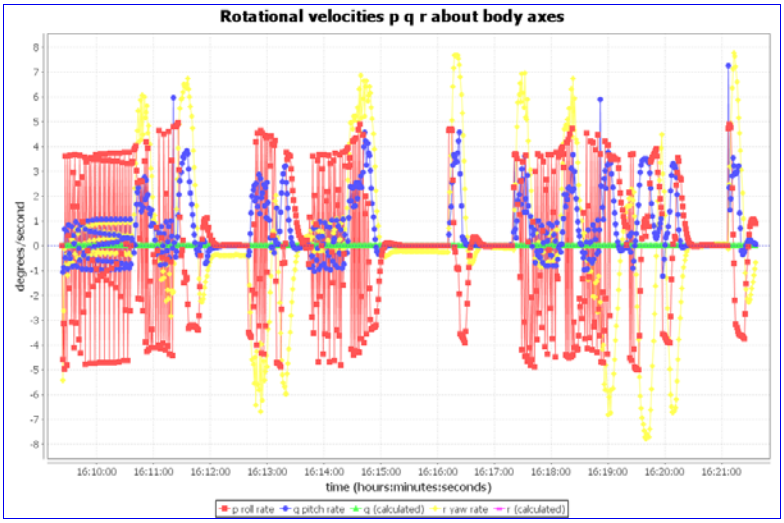

Figure 9: Telemetry plot chartRotationalVelocities (description)

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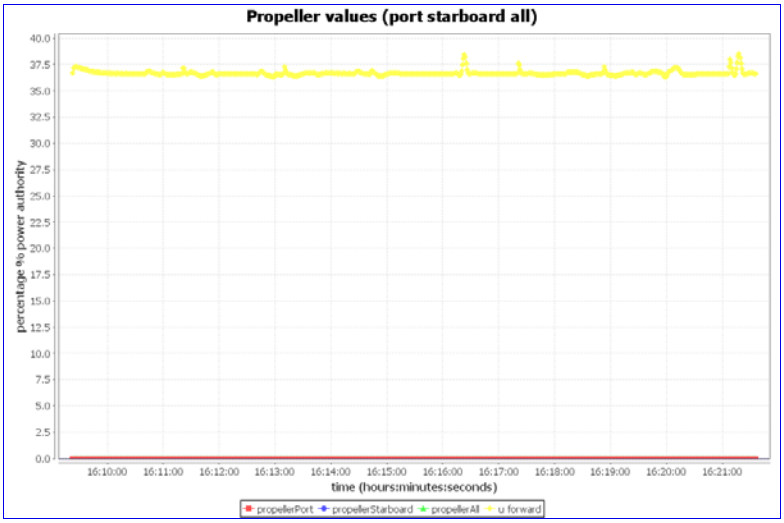

Figure 10: Telemetry plot chartPropellers (description)

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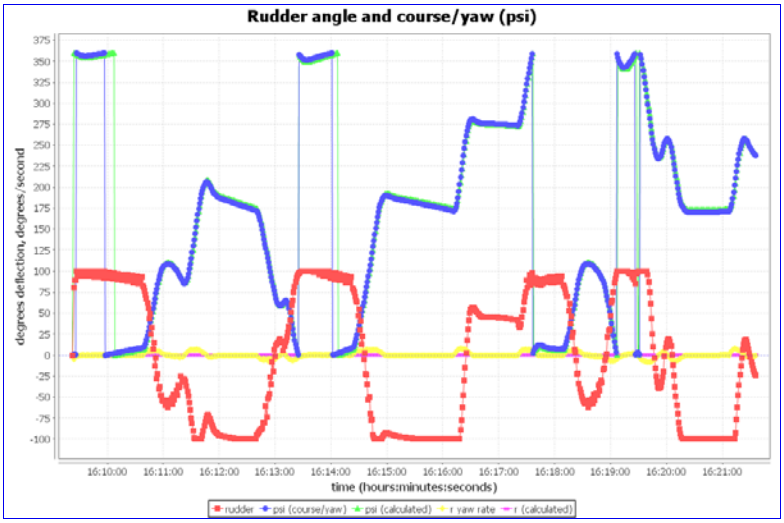

Figure 11: Telemetry plot chartRudder (description)

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Figure 12: Telemetry plot chartPlaneSurfaces (description)

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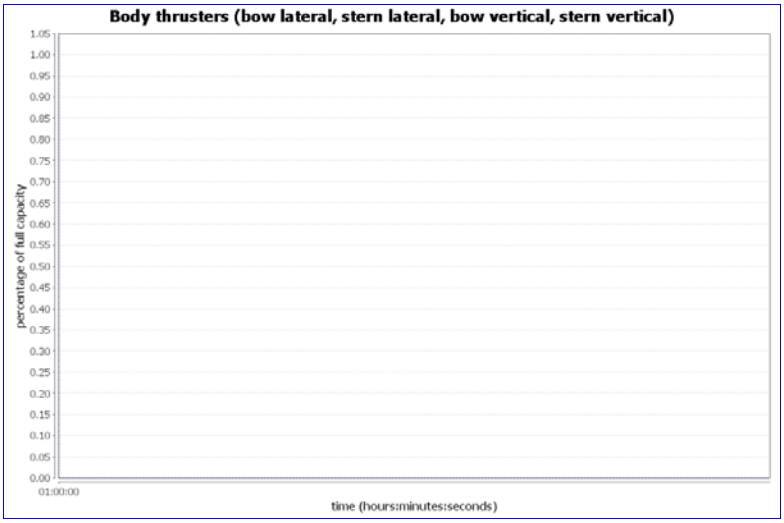

Figure 13: Telemetry plot chartBodyThrusters (description)

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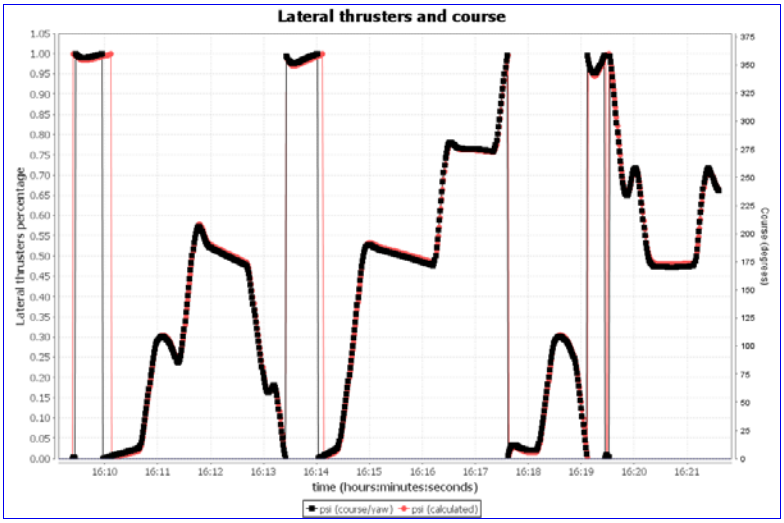

Figure 14: Telemetry plot chartLateralThrustersCourse (description)

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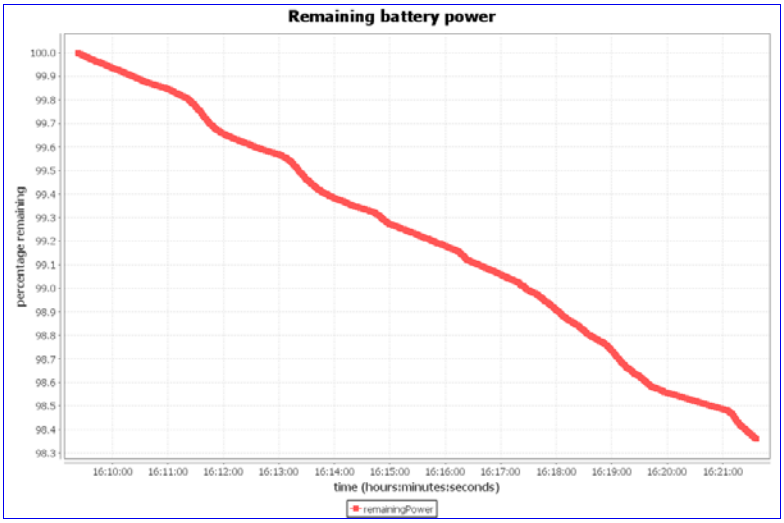

Figure 15: Telemetry plot chartRemainingBatteryPower (description)

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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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