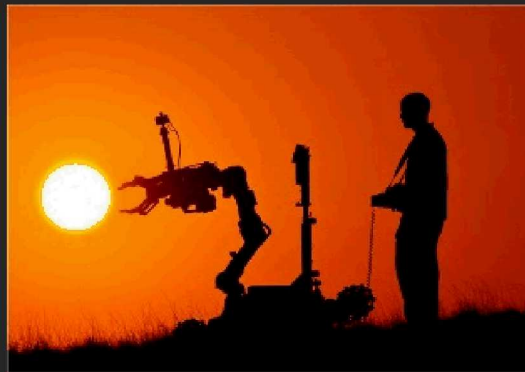


Exceptional service in the national interest



Analytics for Arctic Response

*Jon R. Salton, P.E.
Manager - Robotics & Counter Robotics R&D
High Consequence Automation & Robotics*

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ANALYTICAL TOOL FOR INTERDICTION

- Graphic shown here is notional -

Inputs

Current Scenario: C:\Users\jallon\Desktop\TS for Jon\HTML - Latest\scenarios\JIATFS EastPac with Intel.scenario [Load Scenario](#) [New Scenario](#) ☐ Limited Intel ☒ Interdiction Only

Assumptions and Settings

Target

Route

Search Areas

Show 10 entries

ID	Sea State	# IC
1	3	0
2	2	15

Showing 1 to 2 of 2 entries

[Delete All Search Areas](#)

Assets

Show 10 entries

Search:

Platform	Lat	Lon
USN P-3 AIP	9 4.20 N	79 22.80 W
USN P-3 UIII	10 35.60 N	85 32.62 W
USN P-3 LRT	13 26.45 N	89 3.33 W
USCGC-130 J	7 51.34 N	80 47.82 W
Frigate	10 36.62 N	88 33.77 W
Cutter	0 35.79 N	81 34.64 W
Frigate	12 16.21 N	89 40.21 W
Cutter	2 41.86 N	83 2.79 W

Showing 1 to 8 of 8 entries

Results

Start: 01/12/2012 09:05 Current: 01/24/2012 06:05

Search Area Results

Show 10 entries

ID	Pd (%)	Pi (%)
1	78.53	40.41
2	60.04	9.15

Showing 1 to 2 of 2 entries

Probabilities

Cumulative Pd: 79.63 %

Total Prob of Blue Success

Cumulative Pd x Pi: 35.05 %

[Compute](#)

Destination

Active Search Areas (shown in yellow)

Route

Regions of Interest (shown in orange)

Source

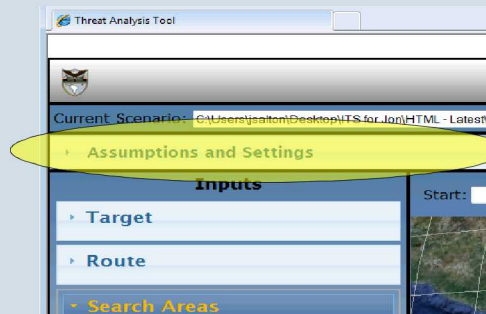
Asset: USN P-3 AIP
Best sensor for Snorkeler: APS 137
Lat: 9 4.20 N
Lon: 79 22.80 W

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US Dept of State Geographer
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[Full Documentation](#)

Also relevant for incident response

ASSUMPTIONS AND SETTINGS



Tool inputs include:

- Time step control
- Target information
 - Information confidence factor, type of vessel, navigation characteristics, and tracking elusiveness
- Response force asset characteristics
- Sensor types and capabilities
- Interdiction methods and capabilities
- Environmental inputs

General

Time step: 24 hours

Key

	- known or high confidence factor
	- assumption with low sensitivity to results
	- assumption with high sensitivity to results

Target

Probability target is in Region of Interest (ROI): 100 %

Uncertainty time window: 72 hours; Box length: 432 nm

Time spent submerged out of every 24 hours:¹

FSV	Snorkeler	SPSS	LPV	Fishing Vessel	Panga	GoFast
14	0	0	0	0	0	0

Loss of tracking Probability per hour:²

FSV	Snorkeler	SPSS	LPV	Fishing Vessel	Panga	GoFast
4	3	3	3	2	1	1

Asset Configurations

Platforms

Name	Type	Transit Speed (kn)	Search Speed (kn)	Endurance (hrs)	Downtime (hrs)
P-3	Air	320	150	12	4
C-130H	Air	290	150	10	4
C-130J	Air	350	150	10	4
E-2C	Air	250	150	5	4
UAV	Air	300	150	20	4
Cutter	Sea	20	15	168	48
Frigate	Sea	20	15	168	48
SSN 688 Class	Sub	20	10	720	48

Sensors

Name	Type	Range (nm)	Pd (FSV) ³	Pd (Snorkeler) ³	Pd (SPSS) ³	Pd (LPV) ³	Pd (Fishing Vessel) ³	Pd (Panga) ³	Pd (GoFast) ³
Visual	Air	2	10	10	30	20	20	30	30
APS 115	Air	10	50	50	75	75	75	90	75
APS 137	Air	20	50	50	75	75	75	90	75
APS 145	Air	10	50	50	75	75	75	90	75
APS 147	Air	40	50	50	75	75	75	90	75
7500E	Air	10	50	50	75	75	75	90	75
SEAVU	Air	40	50	50	75	75	75	90	75
Visual	Sea	0.5	10	10	20	20	20	50	20
Sonar	Sub	10	80	80	80	80	80	80	80

Interdiction

Name	Type	Pi (FSV) ⁴	Pi (Snorkeler) ⁴	Pi (SPSS) ⁴	Pi (LPV) ⁴	Pi (Fishing Vessel) ⁴	Pi (Panga) ⁴	Pi (GoFast) ⁴
Visual	Sea	50	50	55	55	60	60	60
Helicopter	Sea	75	75	80	80	85	85	85

Environment

Max sea state degradation factor: 100 %

Max interfering contact degradation factor: 100 %

¹ - numbers shown are in units of hours
² - numbers shown are given as a percentage from 0-100%
³ - numbers shown are a percentage from 0-100% for the probability of sensing the given target within the range shown
⁴ - numbers shown are a percentage from 0-100% for the probability of interdiction without a helicopter (Visual) and with a helicopter

- Notional inputs -

OTHER FEATURES



- Portable scenario files
 - Automatically saves critical scenario information (assumptions and settings, timeline, assets and assignments, target and route, search areas, environmental inputs, etc.)
- New scenarios are fast and intuitive to set up
- “Interdiction Only” mode allows precision mission planning even after detection
- Visual aids on the Google Earth map indicate asset assignments and allow for dynamic mission planning including drag-n-drop functions
- Sea state and sensing clutter are accounted for as degradation factors
- Verification and validation testing was not done
- Search areas are covered in a generalized manner
 - Prescribed search patterns are not used



- Graphic shown here is notional -

Questions?

Jon R. Salton
Manager - Robotics & Counter Robotics R&D
High Consequence Automation & Robotics
Sandia National Laboratories
Voice: (505) 284-3038
Email: jsalton@sandia.gov