## Test 17: Missile, Radar Sensor, Distance Fuze

1.

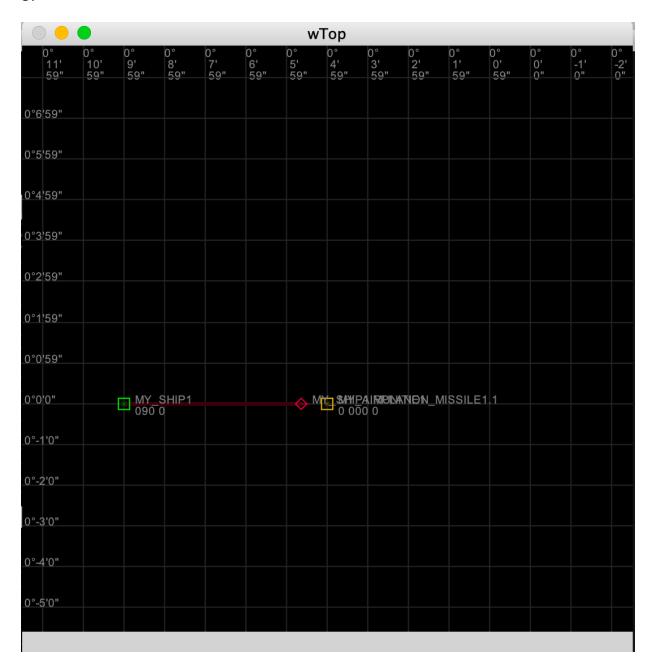
This test will verify that a missile can be fired from a ship towards an aircraft and guide itself using a radar sensor and a distance fuze to detonate after the missile has covered a certain distance.

2.

A ship MY\_SHIP1 starts off at a stationary location facing east, with no speed. MY\_SHIP1 is equipped with a missile that has a radar sensor and a distance fuze. An aircraft MY\_AIRPLANE1 starts off with a speed of 0 with a longitude of 5 minutes away from MY\_SHIP1 facing north.

```
delete window wTop
create window wTop top view with 350 (0*0'0# 0*15'0# 0*1'0.0#)
(0*5'0# 0*15'0# 0*1'0.0#)
define sensor radar SENSOR RADAR1 with field of view 30 power 50
sensitivity 10
define sensor distance FUZE DISTANCE1 with trigger distance 5.0
define munition missile MUNITION MISSILE1 with sensor
SENSOR RADAR1 fuze FUZE DISTANCE1 arming distance 1
define ship ACTOR_SHIP1 with munition (MUNITION_MISSILE1)
define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)
create actor MY_SHIP1 from ACTOR_SHIP1 at 0*0'0.0#/0*10'0.0#/0
with course 90 speed 0
create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
0*0'0.0\#/0*5'0.0\#/0 with course 0 speed 0
set MY SHIP1 load munition MUNITION MISSILE1
@wait 10
set MY SHIP1 deploy munition MY SHIP1.MUNITION MISSILE1.1
```

4. After 10 seconds, MY\_SHIP1 will fire MY\_SHIP1.MUNITION\_MISSILE1.1 and will travel directly east towards the direction of MY\_AIRPLANE1. Once the missile has covered 5 nautical miles, the missile will detonate.



6.

```
event_num event_group time agent_type agent_
```

MY\_SHIP1.MUNITION\_MISSILE1.1 starts of at longitude 0.166667 in event 3

event_num ev	ent_group	time agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deploye	d armed	target_id	power_raw	powe	r_attenuated	distance_elapsed_time_ela	apse target_
3611	940	32.9 airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0	) '		0 =			-		
3612	940	32.9 ship	MY_SHIP1	0	0.166666667	0	90	0	0	)							
3613	940	32.9 missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.094166667	0	90	4	0	TRUE	TRUE						
3614	940	32.9 distance	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_DISTANCE1.2	0	0.094166667	0	90	4	0	)						5.005893	
3615	940	32.9 radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.094166667	0	90	4	0	)		MY_AIRPLANE1	50	)	60.15986481		
3616	941	32.935 airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0	)							
3617	941	32.935 ship	MY_SHIP1	0	0.166666667	0	90	0	0	)							
3618	941	32.935 missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.094	0	90	4	0	TRUE	TRUE						
3619	942	32.97 airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0	)							
3620	942	32.97 ship	MY_SHIP1	0	0.166666667	0	90	0	0	)							
3621	943	33.005 airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0	)							
3622	943	33.005 ship	MY_SHIP1	0	0.166666667	0	90	0	0	)							
3623	944	33.04 airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0	)							

MY\_SHIP.MUNITION\_MISSILE1.1 detonates at a longitude of 0.094 in event 3618

It can be observed that the missile did travel east as expected and then detonated after it covered about 0.072667 (0.166667-0.94) in longitude.

- 7. The actual results are inconsistent with the expected results, MY\_SHIP.MUNITION\_MISSILE1 detonated after about 4.36 nautical miles, the expected distance was 5 nautical. However, MY\_SHIP.MUNITION\_MISSILE1 did travel about 5.02 regular miles.
- 8. Altitude should vary between 2 different actors during a test.

## **Test 20**: Missile, Radar Sensor, Time Fuze

1.

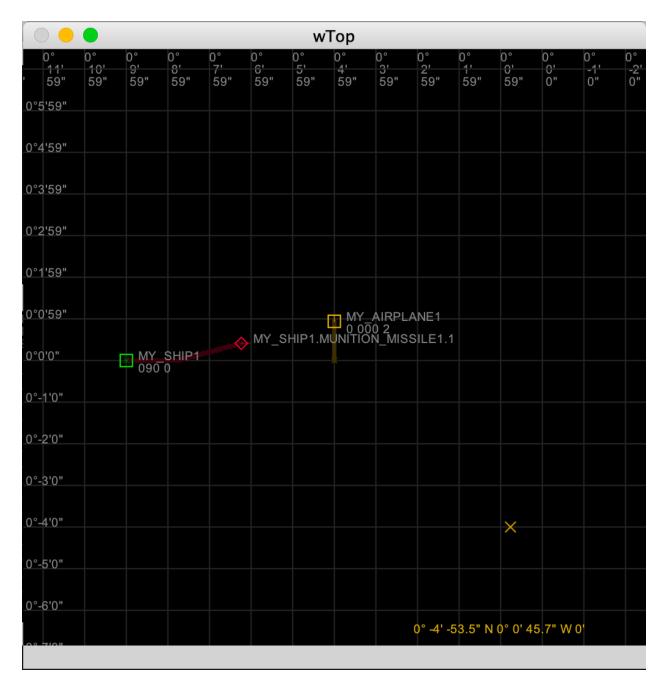
This test will verify that a missile can be fired from a ship towards an aircraft and guide itself using a radar sensor and a time fuze to detonate after the missile has been deployed for a certain amount of time.

2.

A ship MY\_SHIP1 starts off at a stationary location facing east, with no speed. MY\_SHIP1 is equipped with a missile that has a radar sensor and a distance fuze. An aircraft MY\_AIRPLANE1 starts off with a speed of 0 with a longitude of 5 minutes away from MY\_SHIP1 facing north.

```
delete window wTop
create window wTop top view with 350 (0*0'0# 0*15'0# 0*1'0.0#)
(0*5'0# 0*15'0# 0*1'0.0#)
define sensor radar SENSOR RADAR1 with field of view 30 power 50
sensitivity 10
define sensor time FUZE_TIME1 with trigger time 10.0
define munition missile MUNITION MISSILE1 with sensor
SENSOR_RADAR1 fuze FUZE_TIME1 arming distance 1
define ship ACTOR_SHIP1 with munition (MUNITION_MISSILE1)
define airplane ACTOR AIRPLANE1 with munition (MUNITION MISSILE1)
create actor MY_SHIP1 from ACTOR_SHIP1 at 0*0'0.0#/0*10'0.0#/0
with course 90 speed 0
create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
0*0'0.0\#/0*5'0.0\#/0 with course 0 speed 2
set MY_SHIP1 load munition MUNITION_MISSILE1
@wait 10
set MY SHIP1 deploy munition MY SHIP1.MUNITION MISSILE1.1
```

4. After 10 seconds, MY\_SHIP1 will fire MY\_SHIP1.MUNITION\_MISSILE1.1 and will travel towards the direction of MY\_AIRPLANE1. Once the missile has been deployed for 10 seconds it will detonate.



6.

command	event_num event_g	roup	time agent_type	agent id	latitude	longitude	altitude	course	speed	horizontal	speed_vertical	deployed	armed t	arget id	power_raw	power attenual	ed distance	elapsed time_elapsed	ı
	1.MUNITION_MISSI								.,								_		
	1434	697	24.395 airplane	MY_AIRPLANE1	0.007972222	0.083333333	0	0	1	2	0								
	1435	697	24.395 ship	MY_SHIP1	0	0.166666667	0	90	1	0	0								
	1436	697	24.395 missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.166666667	0	90	1	0	0	TRUE	FALSE						
	1437	697	24.395 time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0	0.166666667	0	90	1	0	0							0	)
	1438	697	24.395 radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.166666667	0	90	1	0	0				0		0		
	1439	698	24.43 airplane	MY_AIRPLANE1	0.008	0.083333333	0	0	1	2	0								
	1440	698	24.43 ship	MY_SHIP1	0	0.166666667	0	90	1	0	0								
	1441	698	24.43 missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.166611111	0	90	1	4	0	TRUE	FALSE						
	1442	698	24.43 time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0	0.166611111	0	90	1	4	0							0.035	5
	1443	698	24.43 radar	MY SHIPI MUNITION MISSUELL SENSOR RADARLL	0	0.166611111	0	90		4	0				49 77087709	7.754439	463		

 $\mbox{MY\_SHIP1.MUNITION\_MISSILE1.1}$  is deployed at time 24.395 at event number 1436

event_num e			pe_agent_id					e speed_horizontal					power_raw	power_attenu	uated distance_elapsed ti	me_elapsed target_bearing
2861	982	34.37 missile	MY_SHIP1.MUNITION_MISSILE1.1	0.00675	0.121086435	0	9	0 4	(	TRUE	TRUE					
2862	982	34.37 time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0.00675	0.121086435	0	9	0 4	(	)						9.975
2863	982	34.37 radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0.00675	0.121086435	0	9	0 4	(	)		MY_AIRPLANE1	48.59644552	16.3074	42251	
2864	983	34.405 airplane	MY_AIRPLANE1	0.015916667	0.083333333	0	(	0 2	(	)						
2865	983	34.405 ship	MY_SHIP1	0	0.166666667	0	9	0 0	(	)						
2866	983	34.405 missile	MY_SHIP1.MUNITION_MISSILE1.1	0.00675	0.120919768	0	61	0 4	(	TRUE	TRUE					
2867	983	34.405 time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0.00675	0.120919768	0	61	0 4	(	)						10.01
2868	983	34.405 radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0.00675	0.120919768	0	61	0 4	(	)		MY_AIRPLANE1	48.57624199	16.3661	11665	
2869	984	34.44 airplane	MY_AIRPLANE1	0.015944444	0.083333333	0	(	0 2	(	)						
2870	984	34.44 ship	MY_SHIP1	0	0.166666667	0	9	0 0	(	)						
2871	984	34.44 missile	MY_SHIP1.MUNITION_MISSILE1.1	0.006833333	0.120775431	0	91	0 4	(	TRUE	TRUE					
2872	985	34.475 airplane	MY_AIRPLANE1	0.015972222	0.083333333	0	(	0 2	(	)						
2873	985	34.475 ship	MY_SHIP1	0	0.166666667	0	9	0 0	(	)						
2874	986	34.51 airplane	MY_AIRPLANE1	0.016	0.083333333	0		0 2	(	)						

 $\label{lem:main_model} $$ MY\_SHIP1.MUNITION\_MISSILE1.1 $$ detonates at time 34.44 at event number 2871 towards the direction of $MY\_AIRPLANE1.$ 

- 7. The results are as expected, 10 seconds after the missile was deployed, it detonated.
- 8. Multiple missiles should be launched at different times with different fuze timers and verify that the desired time for each missile is consistent with the time it takes to detonate.

## Test 21: Missile, Thermal Sensor, Radar Fuze

1.

This test verifies that a missile equipped with a thermal sensor and radar fuze can be fired from an airplane towards a ship.

2.

An airplane MY\_AIRPLANE1 starts off at a stationary location facing east, with no speed. MY\_AIRPLANE1 is equipped with a missile that has a thermal sensor and a radar fuze sensor. A ship MY\_SHIP1 starts off with a speed of 1 with a longitude of 30 seconds away from MY\_AIRPLANE1 facing north.

3.

define sensor radar FUZE\_RADAR1 with field of view 30 power 50 sensitivity 10 define sensor thermal FUZE\_THERMAL1 with field of view 45 sensitivity 0.1

define munition missile MUNITION\_MISSILE1 with sensor FUZE\_RADAR1 fuze FUZE\_THERMAL1 arming distance 1.0

define airplane ACTOR\_AIRPLANE1 with munition (MUNITION\_MISSILE1)

define ship ACTOR\_SHIP1 with munition (MUNITION\_MISSILE1)

create actor MY\_AIRPLANE1 from ACTOR\_AIRPLANE1 at 49\*39'37.9#/117\*26'19.0#/0 with course 90 speed 0

create actor MY\_SHIP1 from ACTOR\_SHIP1 at
49\*39'37.9#/117\*25'30.0#/0 with course 0 speed 1

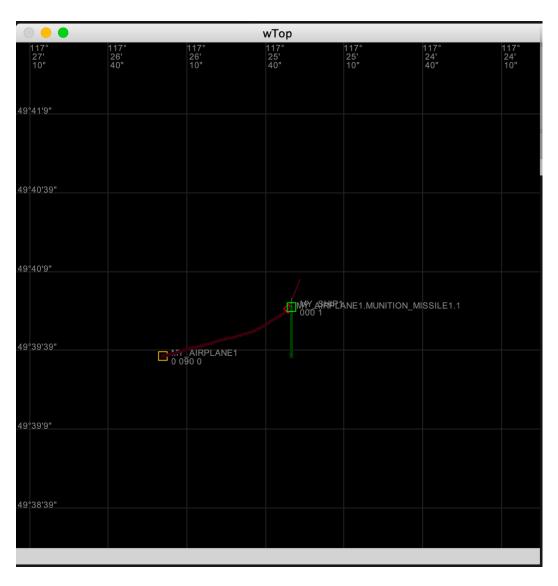
set MY\_AIRPLANE1 load munition MUNITION\_MISSILE1

@wait 10

set MY\_AIRPLANE1 deploy munition MY\_AIRPLANE1.MUNITION\_MISSILE1.1

4. After 10 seconds, MY\_AIRPLANE1 will launch missile MY\_AIRPLANE1.MUNITION\_MISSILE1.1

The missile should chase after  $\texttt{MY\_SHIP1}$  and eventually strike  $\texttt{MY\_SHIP1}$  .



6.																
ever	nt_num event_g	roup	time agent_typ	e agent_id	latitude	longitude	altitude co	urse s	peed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_ela time_elapse target_bearir
	1428	360	12.6 missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438611	0	90	0	0	FALSE	FALSE				
	1429	360	12.6 thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778	117.438611	0	90	0	0			MY_SHIP1	0.15	0.137932628	
	1430	360	12.6 radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778	117.438611	0	90	0	0			MY_SHIP1	48.01095919	44.14851858	
	1431		12.635 airplane	MY_AIRPLANE1	49.66052778		0	90	0	0						90
	1432		12.635 ship	MY_SHIP1	49.6645	117.425	0	0	1	0						
	1433	361	12.635 missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438611	0	90	0	0	TRUE	FALSE				
	1434		12.635 thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778		0	90	0	0			MY_SHIP1	0.15		
	1435		12.635 radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778		0	90	0	0			MY_SHIP1	47.99780523	44.12433042	
	1436	362	12.67 airplane	MY_AIRPLANE1	49.66052778		0	90	0	0						89.9415349
	1437	362		MY_SHIP1	49.66451389	117.425	0	0	1	0						
	1438	362	12.67 missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438444	0	90	4	0	TRUE	FALSE				
	1439	362		MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778		0	90	4	0			MY_SHIP1	0.15		
	1440	362		MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778		0	90	4	0			MY_SHIP1	47.93740693	44.55897218	
	1441	363	12.705 airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0						89.88307
event	_num_event_gre						altitude d							power_raw	power_attenuate	d distance_ela time_elapse target_bearir
event	1863	447	15.645 missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66524271	117.425588	0	53.33922593	speed_horizontal	4	0 TRUE		E		,	
event	1863 1864	447 447	15.645 missile 15.645 thermal	MY_AIR PLANE 1.MUNITION_MISSILE 1.1 MY_AIR PLANE 1.MUNITION_MISSILE 1.1.FUZE_THERMAL 1.2	49.66524271 49.66524271	117.425588 117.425588	0	53.33922593 53.33922593		4			MY_SHIP	1 0.	15 2.63613659	96
event	1863 1864 1865	447 447 447	15.645 missile 15.645 thermal 15.645 radar	MY_AIRPLANE1.MUNITION_MISSILE1.1 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66524271 49.66524271 49.66524271	117.425588 117.425588 117.425588	0 0 0	53.33922593 53.33922593 53.33922593	4 4	4 4 4	0 TRUE 0 0		E	1 0.	15 2.63613659	96
event	1863 1864 1865 1866	447 447 447 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane	MY_AIRPLANE1.MUNITION_MISSILE1.1 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1 MY_AIRPLANE1	49.66524271 49.66524271 49.66524271 49.66052778	117.425588 117.425588 117.425588 117.438611	0 0 0	53.33922593 53.33922593 53.33922593 90	4	4 4 4 0	O TRUE O O O		MY_SHIP	1 0.	15 2.63613659	96
event	1863 1864 1865 1866 1867	447 447 447 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship	MY_AIRPLANE1.MUNITION_MISSILE1.1 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2 MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1 MY_AIRPLANE1 MY_SHP1	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833	117.425588 117.425588 117.425588 117.438611 117.425	0 0 0 0	53.33922593 53.33922593 53.33922593 90 0	4	4 4 4 0 1	0 TRUE 0 0 0 0	FALSE	MY_SHIP MY_SHIP	1 0.	15 2.63613659	96
event	1863 1864 1865 1866 1867 1868	447 447 447 448 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile	MY_ARPLANELMUNITION_MISSILE1.1 MY_ARPLANELMUNITION_MISSILE1.1FUZE_THERMAL1.2 MY_ARPLANELMUNITION_MISSILE1.1FUZE_RADAR1.1 MY_ARPLANE1 MY_ARPLANE1 MY_ARPLANE1 MY_ARPLANELMUNITION_MISSILE1.1	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422	117.425588 117.425588 117.425588 117.438611 117.425 117.425456	0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267	4 4	4 4 4 0 1	O TRUE O O O O TRUE		MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.92859	96 96 90
event	1863 1864 1865 1866 1867 1868 1869	447 447 447 448 448 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal	MY_ARRAMELMUNITION_MISSILE1.1 MY_ARRAMELMUNITION_MISSILE1.1FUZE_THERMAL1.2 MY_ARRHAMELMUNITION_MISSILE1.1FUZE_RADAR1.1 MY_ARRHAMEL MY_SHP1 MY_ARRHAMELMUNITION_MISSILE1.1 MY_ARRHAMELMUNITION_MISSILE1.1 MY_ARRHAMELMUNITION_MISSILE1.1FUZE_THERMAL1.2	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422	117.425588 117.425588 117.425588 117.438611 117.425 117.425456	0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267	4 4 4 4 4 4 4	4 4 4 0 1 1 4	0 TRUE 0 0 0 0 0 0 0 TRUE	FALSE	MY_SHIP MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90
event	1863 1864 1865 1866 1867 1868 1869 1870	447 447 448 448 448 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal 15.68 radar	MY_ARPANEI.MUNITION_MSSIEI.1 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_THERMALI.2 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_RADARI.1 MY_ARPANEI. MY_ARPANEI.MUNITION_MSSIEI.1 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_THERMALI.2 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_RADARI.1	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422 49.66534422	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456	0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 52.47851267	4 4 6 1 4 4	4 4 4 0 1 1 4	O TRUE O O O O TRUE	FALSE	MY_SHIP MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90
event	1863 1864 1865 1866 1867 1868 1869 1870	447 447 448 448 448 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal	MY_ARRAMELMUNITION_MISSILE1.1 MY_ARRAMELMUNITION_MISSILE1.1FUZE_THERMAL1.2 MY_ARRHAMELMUNITION_MISSILE1.1FUZE_RADAR1.1 MY_ARRHAMEL MY_SHP1 MY_ARRHAMELMUNITION_MISSILE1.1 MY_ARRHAMELMUNITION_MISSILE1.1 MY_ARRHAMELMUNITION_MISSILE1.1FUZE_THERMAL1.2	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456	0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267	4 4 4 4 4 4 4	4 4 4 D 1 4 4	0 TRUE 0 0 0 0 0 0 0 TRUE	FALSE	MY_SHIP MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90
event	1863 1864 1865 1866 1867 1868 1869 1870	447 447 447 448 448 448 448 448 448	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal 15.68 radar	MY_ARPANEI.MUNITION_MSSIEI.1 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_THERMALI.2 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_RADARI.1 MY_ARPANEI. MY_ARPANEI.MUNITION_MSSIEI.1 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_THERMALI.2 MY_ARPANEI.MUNITION_MSSIEI.1FUZE_RADARI.1	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422 49.66534422	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456	0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 52.47851267	4 4 6 3 4 4 4	4 4 4 D 1 1 4 4 4	0 TRUE 0 0 0 0 0 0 0 TRUE 0 0	FALSE	MY_SHIP MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90
event	1863 1864 1865 1866 1867 1868 1869 1870 1871	447 447 447 448 448 448 448 448 449 449	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal 15.68 radar 15.68 radar	MY_ARPANELMUNTION_MISSIE.1  MY_ARPANELMUNTION_MISSIE.1.FUZE_THERMAL12  MY_ARPANELMUNTION_MISSIE.1.FUZE_RADAR1.1  MY_ARPANELMUNTION_MISSIE.1.FUZE_RADAR1.1  MY_ARPANELMUNTION_MISSIE.1.FUZE_THERMAL1.2  MY_ARPANELMUNTION_MISSIE.1.FUZE_THERMAL1.2  MY_ARPANELMUNTION_MISSIE.1.FUZE_RADAR1.1  MY_ARPANELMUNTION_MISSIE.1.FUZE_RADAR1.1  MY_ARPANELMUNTION_MISSIE.1.FUZE_RADAR1.1	49.66524271 49.66524271 49.66524271 49.6652778 49.66570833 49.66534422 49.66534422 49.66534422 49.66552278 49.66572222	117.425588 117.425588 117.425588 117.425588 117.425456 117.425456 117.425456 117.425456 117.425456 117.425456	0 0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 90	4 4 6 3 4 4 4	4 4 4 0 1 1 4 4 4 4 0	0 TRUE 0 0 0 0 0 0 0 TRUE 0 0	FALSE	MY_SHIP MY_SHIP  MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90 90 91 95
event	1863 1864 1865 1866 1867 1868 1869 1870 1871 1871 1872	447 447 448 448 448 448 448 449 449	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal 15.68 radar 15.715 airplane 15.715 ship	MY_ARPANEI_MUNITION_MISSIEI.1  MY_ARPANEI_MUNITION_MISSIEI.1FUZE_THERMALI2  MY_ARPANEI_MUNITION_MISSIEI.1FUZE_RADARI.1  MY_ARPANEI  MY_ARPANEI  MY_ARPANEI.MUNITION_MISSIEI.1  MY_ARPANEI.MUNITION_MISSIEI.1FUZE_THERMALI.2  MY_ARPANEI.MUNITION_MISSIEI.1FUZE_TADARI.1  MY_ARPANEI.MUNITION_MISSIEI.1FUZE_RADARI.1  MY_ARPANEI.MUNITION_MISSIEI.1FUZE_RADARI.1	49.66524271 49.66524271 49.66524271 49.6652778 49.66570833 49.66534422 49.66534422 49.66534422 49.665372222	117.425588 117.425588 117.425588 117.425588 117.425456 117.425456 117.425456 117.425456 117.425456 117.425456	0 0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 90 0	444444444444444444444444444444444444444	4 4 4 0 1 1 4 4 4 4 4 0 0	0 TRUE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FALSE	MY_SHIP MY_SHIP  MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90 90 91 95
event	1863 1864 1865 1866 1867 1868 1869 1870 1871 1871 1872 1873	447 447 448 448 448 448 448 449 449 449	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 thermal 15.68 radar 15.715 airplane 15.715 ship 15.715 missile	MY_AIRPANELMUNITION_MISSIEL:1 MY_AIRPANELMUNITION_MISSIEL:1.FUZE_THERMALL2 MY_AIRPANELMUNITION_MISSIEL:1.FUZE_RADAR1.1 MY_AIRPANELMUNITION_MISSIEL:1.FUZE_THERMALL2 MY_AIRPANELMUNITION_MISSIEL:1.FUZE_THERMALL2 MY_AIRPANELMUNITION_MISSIEL:1.FUZE_TADAR1.1 MY_AIRPANELMUNITION_MISSIEL.TUZE_TADAR1.1 MY_AIRPANELMUNITION_MISSIEL.TUZE_TADAR1.1 MY_AIRPANELMUNITION_MISSIEL.TUZE_TADA	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422 49.66534422 49.66534222 49.6657278 49.6657278 49.66572324	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456 117.425456 117.425392 117.425392 117.425392	0 0 0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 90 0 22.47851267	4 4 6 6 4 4 4 6	4 4 4 4 0 1 1 1 4 4 4 4 4 4 4 4 0 0 0 0	0 TRUE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FALSE	MY_SHIP MY_SHIP  MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90 90 91 95
event	1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1874 1875	447 447 448 448 448 448 448 449 449 449 450 450	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 missile 15.68 missile 15.68 thermal 15.68 radar 15.715 airplane 15.715 ship 15.715 missile 15.715 missile	MY_ARPANEI_MUNITION_MSSIEI.1  MY_ARPANEI_MUNITION_MSSIEI.1.FUZE_THERMALI.2  MY_ARPANEI_MUNITION_MSSIEI.1.FUZE_THERMALI.2  MY_ARPANEI_MUNITION_MSSIEI.1  MY_ARPANEI_MUNITION_MSSIEI.1  MY_ARPANEI_MUNITION_MSSIEI.1.FUZE_THERMALI.2  MY_ARPANEI_MUNITION_MSSIEI.1.FUZE_THERMALI.2  MY_ARPANEI_MUNITION_MSSIEI.1.FUZE_THERMALI.2  MY_ARPANEI_MUNITION_MSSIEI.1  MY_ARPANEI_MUNITION_MSSIEI.1  MY_ARPANEI_MUNITION_MSSIEI.1	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422 49.66534422 49.66534422 49.66532728 49.66572222 49.66572222	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456 117.425456 117.425392 117.425392 117.425392	0 0 0 0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 90 0 22.47851267 90	4 4 6 6 4 4 4 6	4 4 4 4 0 1 1 4 4 4 4 4 0 0 1 1 1	0 TRUE 0 0 0 0 0 TRUE 0 0 0 TRUE 0 0 TRUE	FALSE	MY_SHIP MY_SHIP  MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90 90 91 95
event	1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876	447 447 448 448 448 448 448 449 449 450 450 451	15.645 missile 15.645 thermal 15.645 radar 15.68 airplane 15.68 ship 15.68 missile 15.68 radar 15.715 airplane 15.715 ship 15.715 missile 15.75 airplane 15.75 airplane 15.75 airplane 15.75 airplane 15.75 ship	MY_ARPANELMUNITION_MISSIE:1  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.FUZE_THERMAL12  MY_ARPANELMUNITION_MISSIE:1.M	49.66524271 49.66524271 49.66524271 49.66052778 49.66570833 49.66534422 49.66534422 49.66534222 49.6657278 49.6657278 49.66572324	117.425588 117.425588 117.425588 117.438611 117.425 117.425456 117.425456 117.425456 117.425392 117.425392 117.425392	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	53.33922593 53.33922593 53.33922593 90 0 52.47851267 52.47851267 90 0 22.47851267 90 0	4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 4 4 9 0 1 1 4 4 4 4 4 4 0 0 1 1 1 1 4 4 4 4 0 0 0 1 1 1 1	0 TRUE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FALSE	MY_SHIP MY_SHIP  MY_SHIP  MY_SHIP	1 0. 1 39.65624	15 2.63613659 92 696.928599 15 3.35031129	90 90 91 95

Log entry 1433 shows that MY\_AIRPLANE1.MUNITION\_MISSILE1.1 has been deployed after 10 seconds towards MY\_SHIP1. Entry 1873 shows MY\_AIRPLANE1.MUNITION\_MISSILE1.1 striking MY\_SHIP1.

- The actual results are constituent with the expected results.
- 8. A different ship should target  $MY\_SHIP1$  instead of an aircraft, this would verify that a missile can be deployed from different types of actors.