

ZEU AI SKILL DEVELOPMENT MISSION



VERSION

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Intention

The original intention of the zeu_serverskill addon was to create a more enjoyable Coop experience by reducing the A.I's laser accurate ability at long ranges without any addon requirement for the client

I created this mission to aid me investigate and developing a set of skill values to achieve my aim:

- Aiming Speed
- Aiming Accuracy
- Aiming Shake
- Spotting Distance
- Spotting Time

The mission has been designed to create consistency where possible and to speed up testing. Your avatar is invincible and has a hit eventhandler attached to it, to register any rounds that land on target

There are a set of params for selection before mission start and a set of addactions to aid you during testing.

The mission is set up on the airfield where the AI have clear line of site to you.

There is a 3km view distance.

You can define how close you start to the enemy via the params

Each 100m is marked by a set of sandbag / hesco defences.

FUTURE INTENTIONS

Protegitimus created the ArmA2 Zeus AI which was warmly welcomed by the community.

Time permitting, and at some time in the future, I may start to create a set of configs that changes the dispersion, camouflage, hearing, engagement ranges etc of the units, weapons and vehicles.

But for now, we just need a simple fix for AI so that they do not annihilate us

Params

TIME OF DAY

Day or night option. (This is all that is needed to check the A.I's abilities in 2 states of lighting
Checking their reactions and ability at first light and last light returns inconsistent values

A.I NVG'S

To toggle testing their night time abilities, with or without their NVG's

STARTING DISTANCE FROM ENEMY

Saves time, start as close to them as possible, while still having them retain a Knowsabout value of 0 for your player units

AI SKILL (MISSION EDITOR)

This has the same effect as the slider in the editor. It sets all the various skill settings at the same value.
To check individual abilities also set the following values

SKILL: *****

All these skills can be individually set between values – and 1 in 0.05 increments

- Skill: Aiming Speed
- Skill: Aiming Accuracy
- Skill: Aiming Shake
- Skill: Spotting Distance
- Skill: Spotting Time
- Skill: Commanding"
- Skill: Endurance
- Skill: Reload Speed
- Skill: general

Addactions

There are five addactions available to the player.

VIEW SKILL VALUES

This will post a hint message with the various skill values the units have

VIEW COMBAT VALUES

This will list your player name

The distance from the enemy group leader

The enemy group leaders "Knowsabout value for your group

Once any player has been hit, you will also get a shots fired to hit ratio as a percentage

Knowing the distance to the enemy, their knowsabout value of the closest player and the accuracy of their shots will help you to tweak the values for the following skills

- Skill: Aiming Speed
- Skill: Aiming Accuracy
- Skill: Aiming Shake
- Skill: Spotting Distance
- Skill: Spotting Time

RESET COUNTERS

This resets the shots fired : Hit ratio

REVEAL YOURSELF TO ENEMY

This sets their knowsabout to full. Use this to verify their maximum engagement ranges

At distance you will notice the marksman will engage, as you close on the enemy, more units will engage you.

DISABLE AI GRP MOVE

Disables the AI ability to move towards you

How to test

Your player is set to not receive damage when hit (Makes it invincible). It also has a hit event handler attached to it, which informs you when you have been shot.

Initial testing should be done in a non addon environment and default settings to get a benchmark for the engagement distances, spotting distances etc

Having determined the effects at default settings, you can then test one skill type at a time, and get a feel for how that effects the AI's ability.

Once you have an understanding and an idea of an optimised values for each individual skill, try changing 2 skills from their default and see how they effect one n other

Typically pair the following

- Skill: Aiming Accuracy + Skill: Aiming Shake
- Skill: Spotting Distance + Skill: Spotting Time

HOW I TEST

For spotting distance

I zig zag across the runway at a consistent pace, moving a meter or so closer to the enemy with each zig zag until I see the knowsabout value shoots up.

I then re-run that test quite a few times until I get consistency in the reading

I will try running first (should be spotted at the greatest distance)

Then walking

Then crawling

For Aiming accuracy

At a specific range reveal your player to the enemy via the addaction and then monitor the shots fired to hit ration.

Do this in a prone position, kneeling, standing etc

That's basically it

Recorded Data

Here are the excel spreadsheets I was logging my findings on

SPOTDISTANCE : SPOTTIME

Spotting Tme		1	0.75	0.5	0.25	0.2	0.1	0
spotdistance	1	Running	385m		385m	385m	260m	75m
		Walking	190m		190m		170m	75m
		Crawling	110m		110m		75m	58m
spotdistance	0.75	Running						
		Walking						
		Crawling						
spotdistance	0.5	Running	365		365		75	
		Walking						
		Crawling						
spotdistance	0.25	Running	335m					
		Walking						
		Crawling						
spotdistance	0.2	Running	335m				64m	
		Walking					54m	
		Crawling						
spotdistance	0	Running	330m					
		Walking						
		Crawling						

AIMING ACCURACY: AIMING SHAKE

aiming shake Skill	0.63						
	100	200	300	400	500	600	

aiming acc	1	Stood	100	100	75	49%	36%	25%
		Kneeling						
		Prone						

aiming acc	0.75	Stood						
		Kneeling						
		Prone						

aiming acc	0.5	Stood	49%	33%	16%	9%	9% ??	2%
		Kneeling						
		Prone						

aiming acc	0.45	Stood			14%			
		Kneeling						
		Prone						

aiming acc	0.4	Stood	36%	23%	11%			
		Kneeling	36%	19%	9%			
		Prone	36%	13%	7%			

aiming acc	0.3	Stood						
		Kneeling						
		Prone						

aiming acc	0.25	Stood	4%	1%				
		Kneeling						
		Prone						

aiming acc	0	Stood						
		Kneeling						
		Prone						