

2004-09-08

Code related

#### Art Related

How to make a bush hidable How to make a bush move when a characters walks through it How to make a bridge work with correct physics How to make correct fences (flat 2-sided polys) with correct collision

### Design Related

# Enemies How does the rear character work? How does the cover character work? How does the scout character work? How do I make an enemy do something special when he sees the player? How do I make an enemy use a mounted weapon? How do I make an enemy throw a flare when he sees the player? How do I make the enemy not notify his group immediately (automatically) when he sees the player? How do I make the enemy sit down somewhere? How do I make the enemy smoke a cigarette? How can I make the enemy fix something? How do I make enemies make a conversation?

## Weapons

Where are the AI settings for the weapons read from?

## General

ALL YOU NEED TO KNOW ABOUT COVER OBJECTS Simulating specific behavior with smart cover placement The infamous 10-meter cover rule Using soft cover in a smart way What is an anchor and how can I place it? How can I check whether I have triangulation/indoor nodes in my level? When do I have to re-generate triangulation? Do I have enough hiding places for a particular enemy? Can I connect indoor waypoints from a VisArea to points in a navigation modifier? How to set up the boids bugs (like grasshoppers, frogs, glow bugs, etc.)

## Troubleshoot:

### **Enemy behavior**

Why does my offensive group attack NOT work?

I cannot get some enemies to STAY at a certain spot and not chase after the player... Some enemies slide slowly without animating properly...

## Art related

Why does my physicalized object do strange things?

How to make a bush hide-able?

You have to create additional planes in max (with the simplest possible geometry) that define where a player hidden in the bush is not visible. The rule of thumb is: **If the player has more than 40% of his screen covered with textures from the bush, he should not be seen** – because he believes he has hidden. You should experiment with the finished bush by placing it in the editor and checking whether it passes this one simple rule.

Most of the time – a fence of additional planes around the bush geometry will do the trick.

The additional planes must be of material **mat\_obstruct**. The geometry must be **single sided** with the only side **facing the outside** of the bush, not the inside.

How does a bush move when a characters walks through it?

The object's "bending" parameter is multiplied with character's speed. Thus, if an object has a bending value of "0" it will not move. Make sure this value is an appropriate one, if you want a character to affect a vegetation.

How do I make an enemy do something special when he sees the player?

You have to place an anchor **within 30 meters to this enemy**, and select the **AIANCHOR\_PUSH\_ALARM** action for it. When the enemy sees the player, he will run to this point before he starts fighting with the player. You can place an AI only trigger here to trigger something special to happen.

If there is a group of people – **only one guy from the group** will go to the anchor (most likely the guy who sees the player first) – the rest will continue fighting normally.

Make sure that your anchor point is not within a forbidden area - in this case, the enemy will not be able to get to it.

This action can be combined with throwing a flare.

How do I make an enemy use a mounted weapon?

You have to place an anchor within 2 meters from an actual mounted weapon, and select the USE\_THIS\_MOUNTED\_WEAPON action for it. Then any enemy within 30 meters of this anchor will prefer to use the mounted weapon when he sees the player and decides to engage him instead of normal combat.

If there is a group of enemies close to this weapon, only one will get to use it – the others will fight normally.

If the player advances to **less than 7 meters** to a guy using the mounted weapon, he will drop the mounted weapon and revert to his normal behavior.

How do I make an enemy throw a flare when he sees the player?

You have to place an anchor **within 10 meters** from the enemy, and select the **AIANCHOR\_THROW\_FLARE** action for it. The enemy will throw a flare when he sees the player and then revert to his normal behavior after that.

Make sure that the enemy you want to throw the flare **has FlareGrenade** ammo selected in his weapon pack. Otherwise he will throw whatever he has – at least a rock.

This action can be combined with running to alarm and delayed group alarming. The enemy will throw the flare and then run to the alarm.

How do I make the enemy NOT notify his group immediately when he sees the player?

You have to place an anchor **within 10 meters** from the enemy, and select the **AIANCHOR\_NOTIFY\_GROUP\_DELAY** action for it. When he sees the player, the enemy will run to it and make an animation to notify his group of the player's position. If the enemy is killed before he reaches this anchor, his group will not be alerted.

This action can be combined with throwing a flare.

How do I make the enemy sit down somewhere?

You have to place an anchor **within 10 meters** from any enemy doing ANY job and select the **AIANCHOR\_SEAT** action for it. The enemy will randomly choose this anchor sometimes and sit there for some time in between idle breaks.

Place this anchor **close to path points** of the enemy, or **close to the spawn spot** of the enemy. He only looks for this type of anchor when he stops at a path node (when he makes idle animations).

This anchor can be freely combined with other idle anchors. Any enemies close to them will choose them from time to time.

How do I make the enemy smoke a cigarette?

You have to place an anchor **within 10 meters** from any enemy doing ANY job and select the **AIANCHOR\_SMOKE** action for it. The enemy will randomly choose this anchor sometimes and sit there for some time in between idle breaks.

Place this anchor **close to path points** of the enemy, or **close to the spawn spot** of the enemy. He only looks for this type of anchor when he stops at a path node (when he makes idle animations).

This anchor can be freely combined with other idle anchors. Any enemies close to them will choose them from time to time.

Where are the AI settings for the weapons read from?

You can find the file in the **Scripts\Default\Entities\Weapons\** folder. The file is **AIWeapons**.lua.

How can I check whether I have triangulation/indoor nodes in my level?

You have to type **ai\_debugdraw 1** in the console to enable the debug information of the AI system. Then you have to type **ai\_drawplayernode 1** to enable drawing of the triangulation.

A triangle will appear around your position. As you move around the map, the triangle that you are currently in will be drawn.

Indoors, you will see the waypoint nodes and the links between them. If you don't see them, then generate AI triangulation. If this doesn't work, check whether you have an entrance to this indoor area.

When do I have to re-generate triangulation?

You don't have to regenerate triangulation often. These are the general guidelines:

- When you have added/removed/moved **OUTDOOR** brushes and/or vegetation.
- $_{\odot}$   $\,$  When you have changed the hidable flag of brushes and/or vegetation.
- $_{\odot}$   $\,$  When you have imported a layer that contains new brushes and/or indoor waypoints.

Re-generation of triangulation is not needed when you add/remove indoor waypoints. These are updated immediately (you can check this by enabling debug draw of triangulation/indoor nodes).

Do I have enough hiding places for a particular enemy?

You can check this by typing **ai\_debugdraw 1** in the console. The enemy in question will have a **red question mark above his head** if he tried to hide but could not find a suitable hiding place. By adding hiding places in the area that he spawns it you can insure that this doesn't happen very often.

Why does my offensive group attack NOT work?

You need to have a **group of at least 3 people**. They all **must be in the same group** – please check their group ID's.

**One of them has to have the Offensive leader archetype** (or have the TLAttack2 character selected). The leader **has to have a job** – make sure he doesn't have some XXXIdle behavior (any job will do). Also make sure that all other group members have some sort of job – this is not a must, but it would look better.

If the attack kind-a works but not quite, make sure that you don't have some guy on the other side of the map that has the same group ID as your group – this will confuse the group (this will be fixed BTW).

Every member of the group can have ANY job behavior you want (he doesn't have to stand around). Even the leader can have any job behavior – please make an effort to make the enemies appear alive when they are idle.

Some enemies slide slowly without animating properly...

This **can only happen indoors**. Please check your waypoints. Some of them (around the sliding guy probably) are just a little below the floor, so that when I try to put them down on the floor, I end up going one level down from their current level.

The usual fix is to move the problematic waypoint up a little bit. In any case, if you cannot see more of the waypoint above the floor than below it, you should probably pick it up a little bit.

In general **you can place the points at any distance above the floor**, they will be projected on to the floor during path finding.

Can I connect indoor waypoints from a VisArea to points in a navigation modifier?

**Yes**, this is possible. All AI Points are the same and can be freely connected, no matter whether they are in a navigation modifier or in a VisArea.

Be careful however that **there is at least one entrance for every navigation modifier**, and one entrance somewhere in the indoor area. Not in each VisArea, but at least once in the same building.

You can quickly check whether your connections are working by following these simple steps.

### How can I make the enemy fix something?

You can use the general **behavior Job\_Fix**. You have to **place an anchor within 20 meters** from the enemy that you have assigned this job to, and **select the action AIANCHOR\_FENCE** for it.

The enemy will approach, then start making animations like he is working on something approximately 1 meter from the ground. Occasionally he will stop and make some idle and then quickly get back to work.

What is an anchor and how can I place it?

An anchor is a **helper that designates a position** in space that is somehow special to the AI. It is used to help the AI when performing jobs (like fixing, smoking etc) and also to help the AI identify alarm spots, reinforcement spots etc.

You can **place an anchor using the AI button** in the editor. Click it and then select AI Anchor from the list. Now you can move over the map and click where you want to place this anchor.

Notice that the anchor has a distinct orientation – for some anchors, orientation is also important.

After you have placed it on the map, look in the properties for this anchor and you will find a field called Action. **Use the drop down dialog to select which action** to associate to this anchor.

You can also assign **anchor properties to a proximity trigger**. Look for the Action property in the properties of the proximity trigger.

Why does my physicalized object not behave correctly?

Make sure that this proxy has <u>one</u> smoothing group, and <u>that the normals point in the right direction</u>, outside, (otherwise the object may "shake" and behave very strangely, e.g. it wants to return to its initial pose and never comes to a stop).

This can only be solved by always applying RESETXFORM to the phys proxy before exporting. The phys proxy (according to Maksym) should not be too small, otherwise the calculations will be wrong.

So make the proxy bigger than the actual object.

### How to make a bridge work with correct physics

The physics calculation gets in kind of trouble, when it has to calculated very complicated objects colliding with vehicles. Detecting very "thin" collision objects the calculation for thin object is very timeconsuming therefore it is turned off by default. (otherwise we would have a waste of calc time, if we render thin and normal physobjects together)

The workaround for this problem: cut away the "road-part", make it a separate object with the same pivot as the base of the bridge. Give it a box (!!!) as collision. This works fine.

## How to make correct fences (flat 2-sided polys) with correct collision

Do not switch on "2-sided" for the polygons that have the same texture on both sides (and have no separate phys proxy) nor use polys, containing open edges, as phys proxies. with "2-sided" switched on .

The physics system can not handle openedged 2-sided polys correctly.

Select these polygons, clone them (SHIFT + move) and flip the normals.

The benefits are a) correct physics and b) better lighting for backside/foreground.

Special Case: a swinging door should never have just two planes facing in opposite direction. Use a box instead. Otherwise, the doorphysics do not work correctly at all.

How to set up the boids bugs (like grasshoppers, frogs, glow bugs, etc.)

- You find the object in Entity/Boids/bugs
- With a shape connected to the boid they can be set up to a specific area. Without a shape the bugs may roam the whole island...
- 0

### • Most parameters are more or less self explanatory, but:

- Behaviour is either 0: flying like flies or glow bugs, 1: flying like butterflies (with occasional stops),
   2: jumps and movement on the ground (frogs, grasshopper)
- The "follow Player" checkbox doesn't mean they follow the player, but they are rendered only around the player.
- To adjust the "jump height" of frogs change the SpeedMin and SpeedMax to values like 0.5 and 4.
- Factor origin: the higher the value the closer the bugs stay to its starting objects. With a value of about 12 they can be bound to fly around a lamp (if the HeightMin and HeightMax frame the height of the lamp).

(added by Alex W.)

I cannot get some enemies to STAY at a certain spot and not chase after the player...

AI FAO

There are several ways to create a situation in which the enemies do not chase the player. In any case, there are special enemy personalities that do this, and special behavioral anchors that make this possible:

- 1. **Make the enemies have the REAR character**. The rear character does not move from his spawn position, and he can be made to protect a certain obstacle. If you have a problem with the rear throwing grenades, assign to him a weapon pack that contains no grenades.
- Place a defensive leader for the group: If you place a defensive leader and make sure that he perceives you faster than the rest of the group, then he will make sure that no one leaves the protection site. He will do this even if he hasn't seen you but only heard you. By doing this you also provide an extra tactical choice to the player – killing the leader. You can learn how to place a defensive leader here.
- 3. **Close them in a forbidden area**: This is by far the most extreme case that ensures the enemies will not leave this position **in any case**. This should not be your first choice. Do this if you cannot get your desired behaviour with the other methods. *Understand that with this you are forever condemning the enemies to the confines of the forbidden area no matter of the player position.*

### How does the REAR character work?

The Rear character works very differently from the cover or the scout. He is not so aggressive, he will not run after the player – he will rather stay where you have spawned him and maybe hide around that place.

Because of this, he is very convenient to have guard some passages, maintain barricades etc. He should not be placed in open places where more action is required because he doesn't tend to move much.

He throws grenades. He does this approximately 50% of the time, the rest he will shoot his normal weapon. If you do not include HandGrenade in his equipment pack, he will not throw any.

The rear will not immediately investigate disturbances... If the disturbance persists and changes nature (visual, sound etc), then he will investigate. He responds to a help request from a team member in the same manner that any other enemy does.

The rear character is not group-aware. Placing rears in offensive or defensive leader groups will not cause him to change his behavior.

You can place a tag point with the name <rearname>\_PROTECT if you want to indicate a point that this particular enemy should protect. He will hang around that point.

If your REAR doesn't move at all after he has spawned, check if he has enough hiding points.

How does the cover character work?

The cover character is the main soldier type in the game Far Cry. He is versatile, converges quickly on the player. He should be used in points in the game where the player needs to be held back, and even motivated to retreat.

Covers use a lot of hiding objects. They never want to be caught open without any cover object between them and the player. This is why they need a lot of cover objects to work in a challenging way. You can check if your cover has enough hide points typing **ai\_debugdraw 1** in the console.

The cover is the most aggressive personality – he will always try to run to the player and kill him. He will use cover objects that take him closer to the player to advance, until there is no more cover object between the player and himself. Then he will stop and optionally lean or duck, but generally hold his ground. This happens until the player relocates into another position that gives the cover another object to advance to.

He does not flank, rather he chooses the fastest approach path to his enemy. He does not retreat, except when going for reinforcements or otherwise ordered (by a designer placing an anchor).

When the cover loses sight of the player in combat, he will chase him. He will use his last known position and run there looking for the player. They are hard to shake once they have noticed you.

You can modify the default cover behavior by placing different kinds of anchors. Consult this document for all the anchors that you can use to make some cover at a specific place do something special.

The cover is group aware and can be placed in a group with any leader. The covers are the "meat" of the group, so make sure your group always has mostly covers. Place a scout in the group where it would serve a purpose.

Covers can be placed alone and they will provide a challenge to the player. They will move a lot and pressure the player.

### How does the scout character work?

The scout is one of the aggressive opponents – like the cover. The main differences between these two are in that the scout tends to keep a distance to the player. If the player comes to close, the scout **will turn his back and run to a safer distance**.

The scout also flanks all the time, choosing randomly left or right hiding objects from his target. They don't advance too much, they basically keep their distance.

Another difference is that the scout tends to investigate disturbances more than the cover, so place him where you want to simulate a point that is well guarded.

The scout is as group aware as the cover, although he performs a little differently in a group – but he will still listen to the team leader's orders.

Scouts placed alone will not provide sufficient resistance to the player. They are always "the support" section of each group. If they are alone the player can chase them as they try to put distance between the player and themselves. This is why it is desirable that a group that contains a scout contains also "meat" – covers and rears that will keep the player pinned while the scouts seek out flanking positions.

Scouts will chase the player after they have lost him, but not so aggressively as the covers.

They should be lightly armed and they should generally have higher accuracy but less aggression. They should also always have longer sight ranges than that of the covers. That should compensate for their poor individual battle performance. As a rule of thumb, it should be more difficult to approach the scout then to fight him at short range.

## ALL YOU NEED TO KNOW ABOUT COVER OBJECTS

Cover objects in the game should be plentiful, and when only they are visible – they should show the conceptual (logical) layout of the map. They should show areas where AI would be expected to move, lines of advancement and more importantly they should show a clear separation between action bubbles.

There is a way of using cover objects badly, which is when they are placed in clearly unreachable places, or on steep inclines, or on edges of action bubbles (or cliffs). All of these occurrences will potentially break the consistency of the enemy behavior, and should be used sparingly and with forethought.

As a general conclusion, more cover is always better than less. Having more cover places no speed penalty on the execution, and only a symbolic increase in memory consumption.

A cover spot does not necessarily have to correspond to an actual object. A fake cover spot can be created to facilitate a movement objective for the AI where for artistic (or other reasons) there is not a real object. The enemy will recognize such a cover spot transparently and act accordingly.

Cover objects can also be of half-height. An enemy choosing such a hide spot will adjust his body stance automatically. This is done transparently.

When an object is placed to serve as a cover object OUTDOORS, it should generally have a radius no larger than 3 meters. While this is not mandatory, it will look better for the movement of the enemies. If a larger cover than 3 meters is needed, then it should be broken up into smaller pieces, or declared as non-hide able, and then embellished with fake hiding objects. For INDOORS this is not valid, as hide point processing is completely different.

Cover is used in some instances as ordinary movement targets (during idles and so on). The pig for example uses the cover as anchors to move trough the environment. This is why cover placing is crucial for making a living world.

## Simulating specific behavior with smart cover placement

Another thing that affects the movement of the enemies is their intrinsic behavior pattern. For example, a cover character will advance using cover to the position of the player, while a scout will stay at approx 15-20 meters from the player, and try flanking him left and right. Knowing these properties is crucial to being able to take advantage of them – combined with the 10-meter rule.

The most basic cover structure is of course the **single cover** object. Pretty much all enemies when placed in a situation like this will stick to this object and periodically come out to engage the player. This kind of setup is useful when you want the enemy to protect a certain spot or path of movement. He will use this cover in all directions according to the player's movement, so the surrounding environment should work toward guiding the player toward this spot (otherwise the player can just circumvent the setup).

Next, cover can be arranged in a **straight line** (with cover at least 10 meters from each other). This is the first setup in which differences between personalities become obvious. Lets say that this cover line is placed perpendicular to the player's approach vector. If you place a cover here, he will not be able to approach the player using cover, since the only cover will now be to the left and right of him. Thus, he will hang around his initial cover spot and fight from there (behaving like a single cover character). However, if you place a scout in this setup, then he will move left and right along the line and protect the full length of the line. Since he will not have cover behind him, he will be forced to stay and protect the line until he is dead.

The line has other cool properties. For example, if the player now relocates and moves in an approach vector parallel to the line, then the cover will now be able to approach the player using the line cover object. In this situation the cover will behave better then the single cover situation. A rear mercenary (on the other hand) will in both situations generally stick to his cover (like a single cover object) and only flank rarely and reluctantly.

So there are a lot of situations in which a line would be an ideal choice (protecting a path, protecting the perimeter of a compound, fighting in a thin ravine etc). Since the enemy behavior will depend on the orientation of the line from the players approach vector, a variety of combinations will emerge.

The next in the hierarchy of cover object organization is of course the **curved line**. Curved lines exhibit the same properties as the straight line, except they provide more freedom in defining the movement of the enemy. Some cool flank situations can be created using an arc around the

player's presumed position. Using scouts you can give the player the impression that the enemies are organizing themselves to surround the player. Placing a few covers (or rears) in the middle will create the illusion of support fire while the scouts flank. The shape of the curved line can be made to best fit the surrounding environment. As the player changes position, so the roles of the enemies will become more or less dominant in the combat.

Of course, cool situations can be produced with **combining and intersecting lines**. In this way you can provide advance cover lines for covers, and flank lines for scouts. They will both use all cover lines, so as the player relocates the combat will spread accordingly, but along these battle lines that you define.

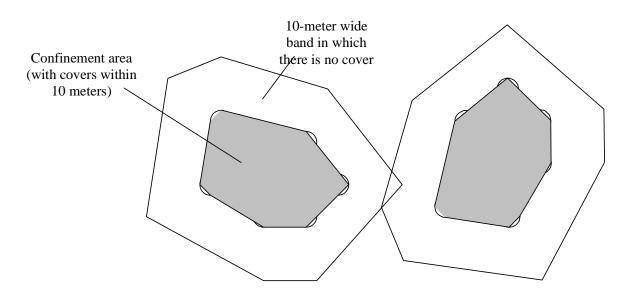
You are encouraged to try all these situations in a test map and watch the emergent behavior that will happen based on the simple rules of movement for the different classes of enemies.

Next step up is to take the cover arrangement into 2 dimensions – **areas**. Like already shown in the picture below, areas can have any shape, but it is imperative that they are created with any sort of idea. Placing random cover objects on the map will create SOME distribution and some areas, but this will result in a very averaged experience and will not yield the results that can be achieved with careful placement.

The 10-Meter cover rule

This is the very basic OUTDOOR rule for the movement of the enemies. You can define areas within which the enemy will be able to move freely – in combat and in idle. These areas should be defined as areas in which there is cover objects separated by no more than 10 meters. Cover objects can be placed closer than 10 meters and there can be an arbitrary number of them.

An enemy placed in such an area will move freely around in it, and use the cover object in combat. If this area is surrounded with a 10m long band (along its edges) in which there is no cover object, then an enemy placed within this area WILL BE CONFINED TO IT. This is illustrated in the following picture.



This is a way to make sure that the player encounters a particular enemy at a particular place. The combat in this area will depend solely on the player's movements, and it will be different every time, but it will ALWAYS happen here.

These areas should be viewed as tools to localize enemy movements, but also as tools to create a certain situation (based on the intrinsic behavior of the enemies).

**APPENDIX:** This rule has been somewhat relaxed, but it is still good practice to have it in mind when designing.

## Using soft cover in a smart way

Far Cry has a feature called soft cover. This represents cover that enemies (and the player) can pass trough, but CANNOT see trough. Soft cover is one feature that has been not used to its fullest extent because of the double nature that it has.

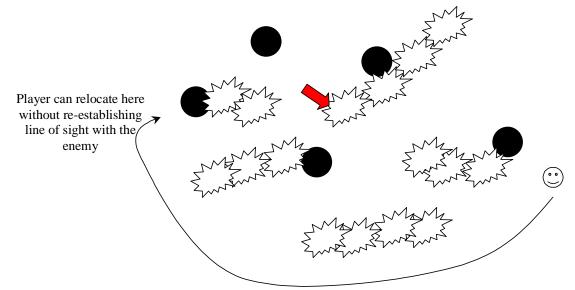
Soft cover occludes the visual field of the player. When used in a bad way it introduces frustration and generally is counter productive. Here are a few guidelines on how to maximize the usefulness of soft cover.

Soft cover objects should never be as high as the player (or higher). This means that at some position they will occlude the players vision and this is bad. Worse however is that any enemy standing behind soft cover like that will be invisible to the player. Even worse is that the enemy will not be able to see the player and so will not be able to respond correctly. So as a general guideline, head high bushes (soft cover objects) should not exist in the game WITHIN THE ACTIVE PORTION OF THE ACTION BUBBLE.

The ideal height of soft cover objects is such that the player can hide behind them IF HE CROUCHES. This makes certain that the player made a conscious decision do break off visual contact with the enemies (he has to press crouch). It also does not hide an enemy standing behind this soft cover object. More importantly, it gives very strong player language that crouching can help you hide and relocate. Some soft cover can be prone height, but this is impractical since the prone movement speed is drastically lower and the player cannot consider moving in prone trough cover as an advantage. However, for certain situations this could be an added plus.

The player should be able to relocate when he is under fire using PRIMARILY SOFT COVER. This is because it is unnatural to place hard cover next to each other (thus providing an escape route during which the enemy will not be able to establish a line of sight), but its very natural to do it using soft cover. So the player will know to duck and then relocate, and likely attack the enemies from the side or from the back. This is a way of giving the player the upper hand in flanking (which is impossible in the current layout of the maps).

The following picture illustrates this method of soft cover placement.



All of the soft cover in the picture is half the player height, so it does not impair the vision of the player. The player can relocate along the shown line in crouch mode while the enemies try to advance to the last known position of the player. This will enable PLAYER flanking in our game – an important player tool.

Another smart usage of soft cover is when you want to provide a sneak way to an action bubble. If the approach is on an inclined position (a hill for example), several prone height objects can be placed on the hill encouraging the player to prone and approach if he wants to sneak. On the other hand, placing low prone soft cover in a valley where the enemy has an inclined position is not advisable.

# How do I make enemies make a conversation?

There are 2 kinds of conversations AI can do, "random conversation" and "mission critical conversations". Random conversations are triggered randomly according to the applied jobs for the AI. They are not related to any special topic or mission. A random conversation could be a small chat about the weather or how awful mosquitoes are. Mission critical conversations are important for the player and are required to give the player information. They should be related to the mission or point in the story the player is now.

### **Random conversations:**

Place an AIANCHOR\_RANDOM\_TALK. Place 2 or more AI's in the range of the anchor with properly chosen jobs and the same group ID. Adjust the anchor range by using the "Area" setting for the object. You will see at the drawn radius of the anchor if an AI will be in range or not.

The closest AI to the anchor will most likely start a random conversation (this is depending on the job, hence AI will just look for the anchor if they are idle).

The script for the conversation is located in: MASTERCD\SCRIPTS\AI\Packs\Conversations\Idle.lua

In the script you need to specify the amount of actors, the order the actors should act, the duration the part will take and soundfile that has to be played. You can adjust the volume for each soundfile there as well.

## **Mission Critical Conversation:**

Place an AIANCHOR\_MISSION\_TALK. Place 2 or more AI's in the range of the anchor with properly chosen jobs and the same group ID. Adjust the anchor range by using the "Area" setting for the object. You will see at the drawn radius of the anchor if an AI will be in range or not.

The closest AI to the anchor will always start a conversation. The name of the anchor must be the same as the conversation name in the script. In the following example the name of the anchor must be:  $training_pickup_B_1$ 

The script for the conversation is located in: MASTERCD\SCRIPTS\AI\Packs\Conversations\Critical.lua

```
-- TRAINING
training_pickup_B_1 = {
        Participants = 2,
        Script = {
                {
                Actor = 1,
                Duration = 7113,
                SoundData = { soundFile = "", Volume = 255, min = 20, max = 100, sound_unscalable = 0, },
                AnimationToUse = "",
                },
                {
                Actor = 2,
                Duration = 1500,
                SoundData = { soundFile = "", Volume = 255, min = 20, max = 100, sound_unscalable = 0, },
                AnimationToUse = "",
               },
                {
                Actor = 1,
                Duration = 630,
                SoundData = { soundFile = "", Volume = 255, min = 20, max = 100, sound_unscalable = 0, },
                AnimationToUse = "",
               },
               },
        },
```

In the script you need to specify the amount of actors, the order the actors should act, the duration the part will take and soundfile that has to be played. You can adjust the volume for each soundfile as well. Additionally you can specify a special animation that should be used while the sound is played.

**General Note:** Again, the AI that is closest to the anchor will start the conversation and will be the first actor. To limit problems always make a small radius for the anchor and place it close to the AI you want to start the conversation. Notice that the AI will start looking for the anchor from the head (if you make the radius of the anchor 1 and place the anchor at the ground to the feet of the AI, the AI will not find the anchor, because the distance from the head to the position of the anchor will be more than 1 m, either place the anchor closer to the head or make the radius bigger).

If you want to have the AI make a special animation, make sure that the animation is done and the name listed in the \*.cal file for the actor. Make sure all actors have all required animations. If you use more than 2 actors there is currently no way 2 specify the other actors. You can just make sure that the first AI is the AI you want to become the first actor.

Also AI with the flag: special = 1 is currently not allowed to have a conversation. Hey will join a conversation but they will not look for an anchor.