

UE4 MULTIPLAYER 3RD PERSON SHOOTER: v2.1 PROJECT BLUEPRINTS DOCUMENTATION

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<https://mocaponline.com/products/ue4-multiplayer-third-person-shooter-blueprints>



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INTRODUCTION

Thanks for your interest in our Project Blueprints and Map! Here are some basic docs to familiarize yourself with the Project and Demo Map features and implementation of various items.

At the time of this writing 5/29/2018, Version 2.1 is 4.18-4.19 compatible.



WHAT IS IT?

BASIC DESCRIPTION:

A UE4 Template Project, including Blueprints, 3D characters & MoCap Animations.

Network replicating multiplayer 3rd person shooter. Includes master blueprints for all assets, demo level map, weapon and projectile system, multiple automated platforms, player falling damage, acid lakes that cause player damage, custom audio files and more.

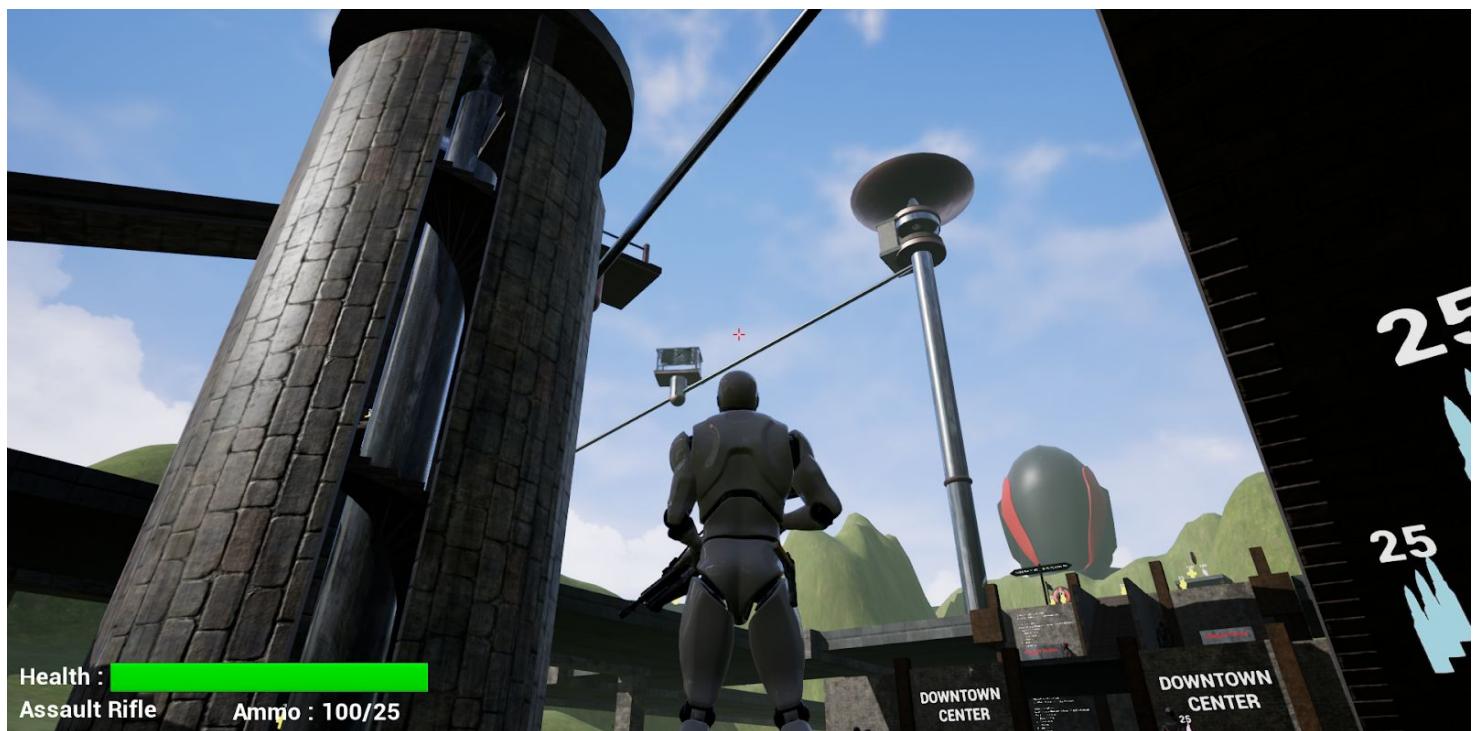
*****NOTE:** Elements from the Free - "Shooter Game Pack" and "Starter Content" © Epic Games - including audio cues/.wav's, materials, particles, textures and objects - are also included and used as examples along with our custom items.

The Playable Demo level .exe is for up to eight players via LAN or Steam, and is the included "TestMap". A starting point to build you own game. For full specs please see the store description.

DOWNLOAD PLAYABLE DEMO HERE:

<https://mocaponline.com/products/ue4-mocap-mp-tps-blueprints-free-demo>

PLAYING THE DEMO "GAME"



The Playable Demo represents 100% what is in the included "TestMap".

It was simply "Packaged" for Win64. (See Tutorial Video 4: Distribution Packaging)

FWIW - I HIGHLY RECOMMEND you play the "game" solo first (Host Game) and explore the entire level - BEFORE you jump into looking at the Project and Blueprints.

Take in all the sounds, surprises and subtleties to be found all over the level and different environments, soak it all in. IT IS A HUGE MAP, multiplayer is a lot more fun with eight players to fill it out, but you better have a powerful host computer to support it. Familiarize yourself with the entire map and use of audio and environment, different sound fields at altitude and all areas, different platform and elevator behaviors, acid damage, progressive levels of falling damage, "platforming" challenges, kill the MotusMan NPC's, etc. It will give you a better understanding of the extent and capabilities of the project and blueprints before you dig in to start modifying and building your own world and maybe give you some ideas on what you want to do.

And of course then play it Multiplayer to frag with friends to understand and see the full gameplay in action.

The creation of the TestMap was the result of loving level design, and wanting to provide a truly fun and entertaining Demo experience with some depth - more akin to a real game than feature demonstration.

For Internet Play:

Run MP_TPS_Template.exe (For solo play as well)

Must have Steam running in the background.

Steam>Settings>Downloads>Download Region - Typically must be set to the same City.

Anyone can Host a Game/Server. HOWEVER, the power/speed and internet connection of the Host can definitely adversely affect player experience/lag etc. - as usual in MP games.

Demo limited to 8 players - for above reasons.

NOTE: ***Can play over LAN as well - Click "Steam Enabled" to toggle to "LAN Enabled"

PLAYER CONTROLS AND GAME PLAY



There are "In Game" Instructions on walls all over the map , I suggest you read them here now BEFORE YOU START:

WEAPON STATION INSTRUCTIONS

To Select Different Primary Weapons:

Stand on Platform.

Have Primary Weapon In Hand. Pistol Holstered.

Press 1-5 to Select.

1 = Assault Rifle

2 = Burst Rifle

3 = Shotgun

4 = Beam Gun

5 = Launcher

UNIVERSAL AMMO PICKUPS

All Ammo Pickups are for All Weapons.

However, They Replenish Only the Current and Specific Primary Weapon or Pistol in Hand.

HEALTH PICKUPS

Smaller Pickups Give Less Health.

Bigger Pickups Give More Health.

PLAYER CONTROLS:

M = Toggle Quit Game Button

WSAD = Movement

Mouse = Look

Spacebar = Jump

C = Crouch

L_Shift = Sprint (Relaxed Only)

L_Ctrl = Walk

R = Reload

Q = Toggle Weapon to >Pistol>Primary>

R_Mouse Button = Toggle >Aiming>Relaxed>

(Sprinting/Faster Movement is Possible Relaxed)

L_Mouse Button = Fire Weapon

M_Mouse Button = Toggle Scope

(Scope Only on Burst Rifle for Demo)

P = Respawn Player

THE UE4 EDITOR AND BLUEPRINTS

The main focus of this Project has always been the Player movement and behavior, Weapons systems, and Multiplayer replication and implementation. These are very complex systems and we're not going to go into them in any detail in this doc. Please look at all the Comments and notes in the Blueprints and see programmer John Galt's initial tutorial videos here:

Mocap Online YouTube Playlist:

[Unreal Engine 4 - MP Third Person Shooter Tutorials](#)

Unreal Engine 4 - MP Third Person Shooter Tutorials
Motion Capture Online - 2 / 4

- 1 1:35:46 Motion Capture Online
- 2 1:25:56 Motion Capture Online
- 3 2:01:53 Motion Capture Online
- 4 32:41 Motion Capture Online

Visit John Galt's YouTube channel:

<https://www.youtube.com/channel/UCpuKe9wEgwyusqni1ZnWdBQ>

Video Title	View Count	Published Date
Unreal Engine 4 - (Tutorial) Paragon Characters -	163 views	Streamed 1 week ago
Unreal Engine 4 - (Tutorial) Paragon Characters -	195 views	Streamed 1 week ago
Unreal Engine 4 - (Free Project) Steam Base Adding	51 views	Streamed 1 week ago
UE4 Jetpack Animation Set - Adding To My Steam Base	24 views	Streamed 1 week ago
UE4 Jetpack Animation Set - **Update** Now Live On UE4	25 views	Streamed 1 week ago

WEAPON SOCKETS

There are multiple Sockets the Weapons Blueprints use to attach the various weapons to the Player's Right Hand and Body. They must be assigned correctly in the individual Blueprints for each Weapon in the **"Weapon Hand Socket Name"**

parameter. Please note the exact Location and Rotation of each Socket. Exact placement is critical.

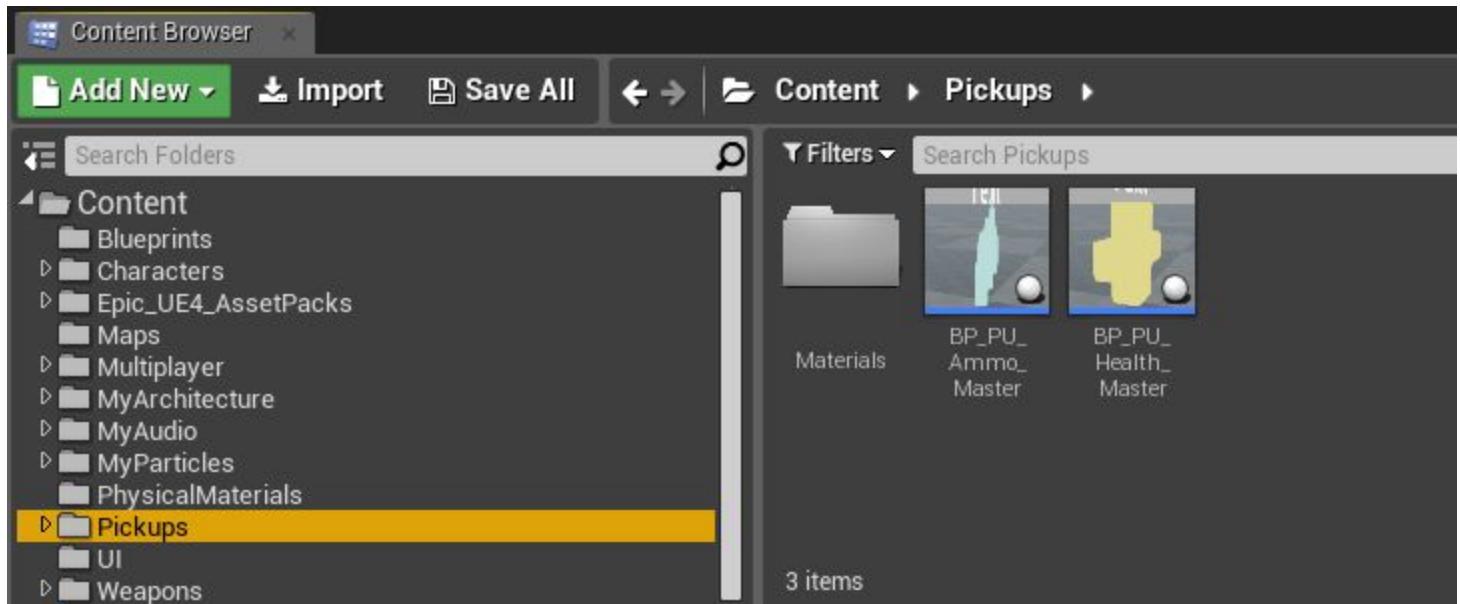


- **middle_01_r_WeaponSocket** - The right hand attachment for the Assault Rifle mesh. Attached to the animated "middle_01_r" bone allows for more flexible placement in the hand and aesthetic poses for both Relaxed and Aiming or other states, versus an odd or broken looking wrist when forced to one position only on the "Hand_r" bone itself. NOTE: Therefore the correct weapon position is dependent on the "middle_01_r" position/pose in the Animations.
 - T = -2.01, 4.68, 0.32 R = -2.95, 5.67, -134.62
- **middle_01_r_WeaponSocket_0** - The same except moved back slightly for a better fit with all the larger Epic Shooter weapons.
 - T = 5.48, 12.15, -0.22 R = -2.95, 5.67, -134.62
- **PistolRHandSocket** - Pistol attachment to "Hand_r", only single position needed.
 - T = -10.58, 4.3, 2.22 R = 106.44, 0.65, 90.20
- **RifleHolsterSocket** - Rifle attachment to "spine_03" on back.
 - T = 20.52, -17.56, 7.02 R = 36.99, -1.95, 98.99
- **PistolHolsterSocket** - Pistol attachment to "Pelvis" on hip.
 - T = 6.92, -7.78, 15.74 R = -4.56, -56.25, 114.25



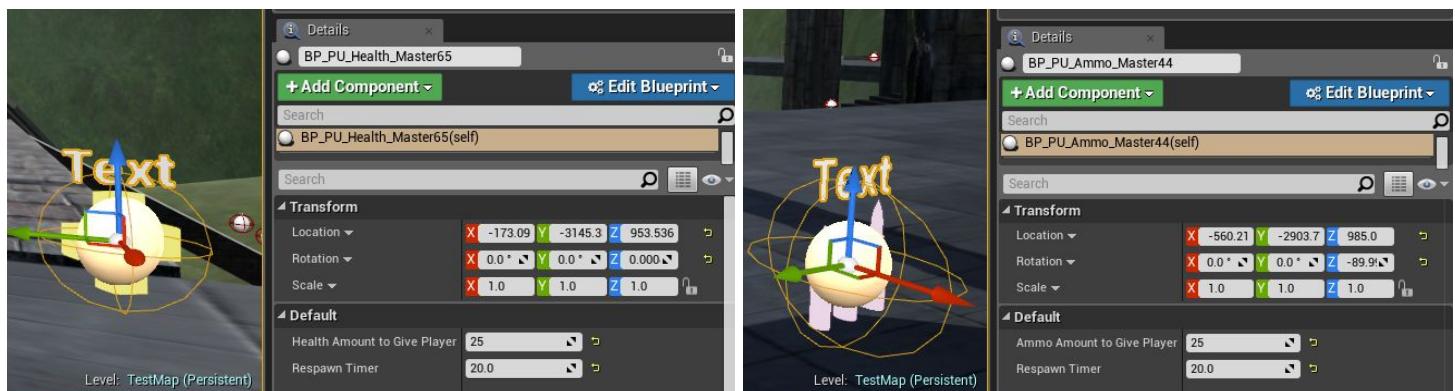
BLUEPRINT ACTORS

Let's look at some features and settings, including new V2 additions.

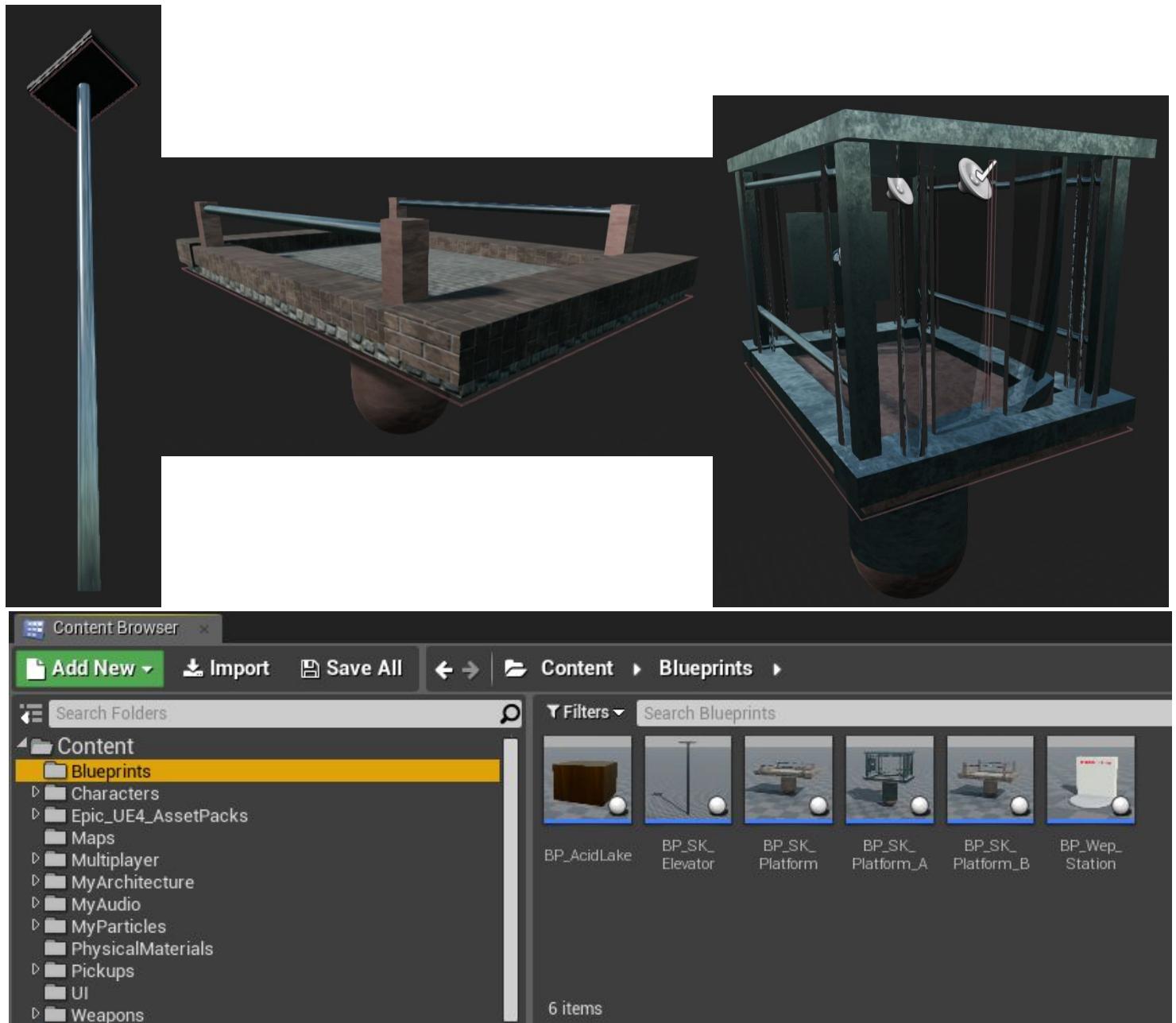


PICKUPS

All the Blueprints have comments and notes to help you understand their function.
Dragging actor Blueprints into the map creates an instance with individual settings.

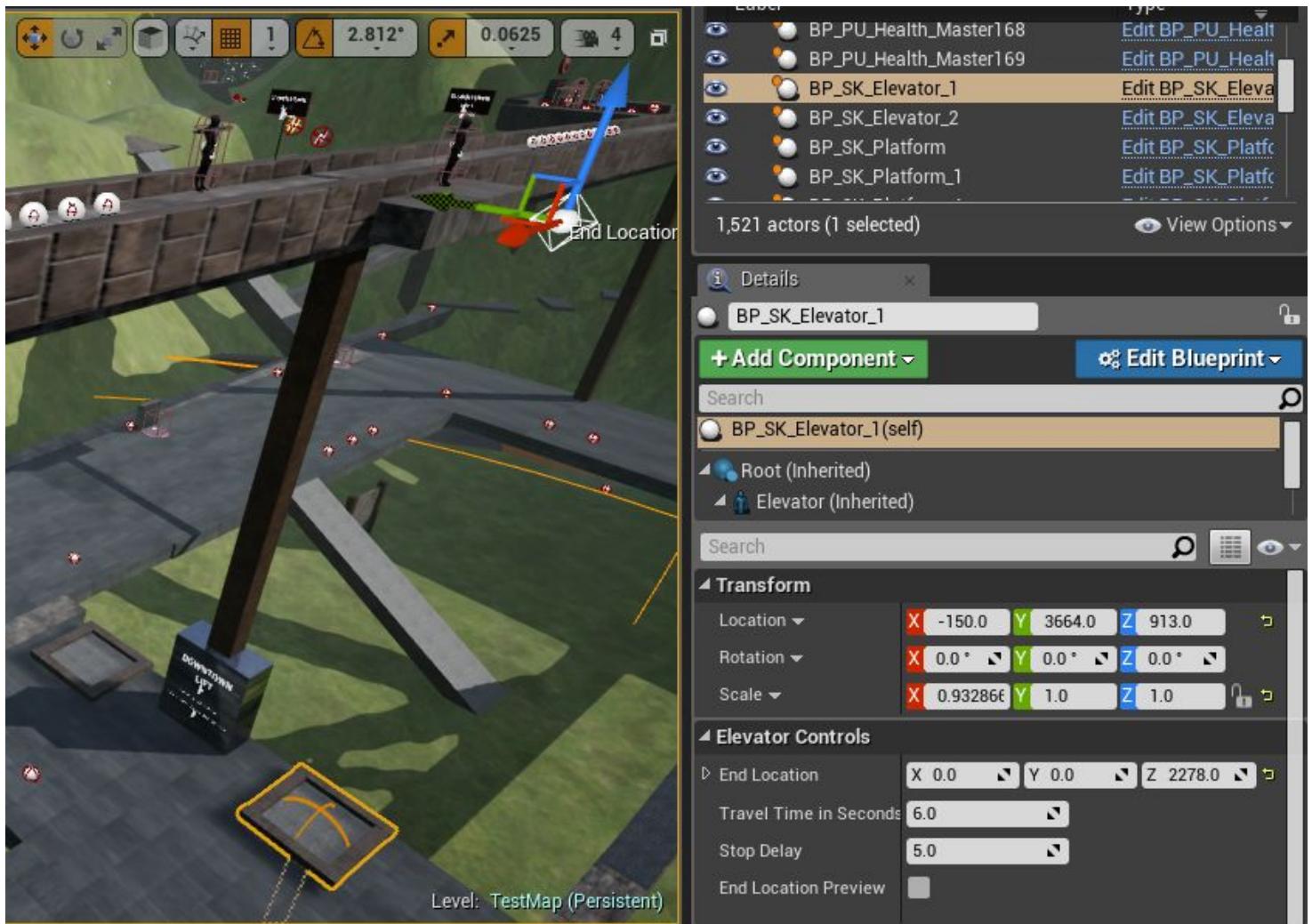


For "Health" and "Ammo" pickups, amount and respawn time can be set individually.



ELEVATORS/PLATFORMS

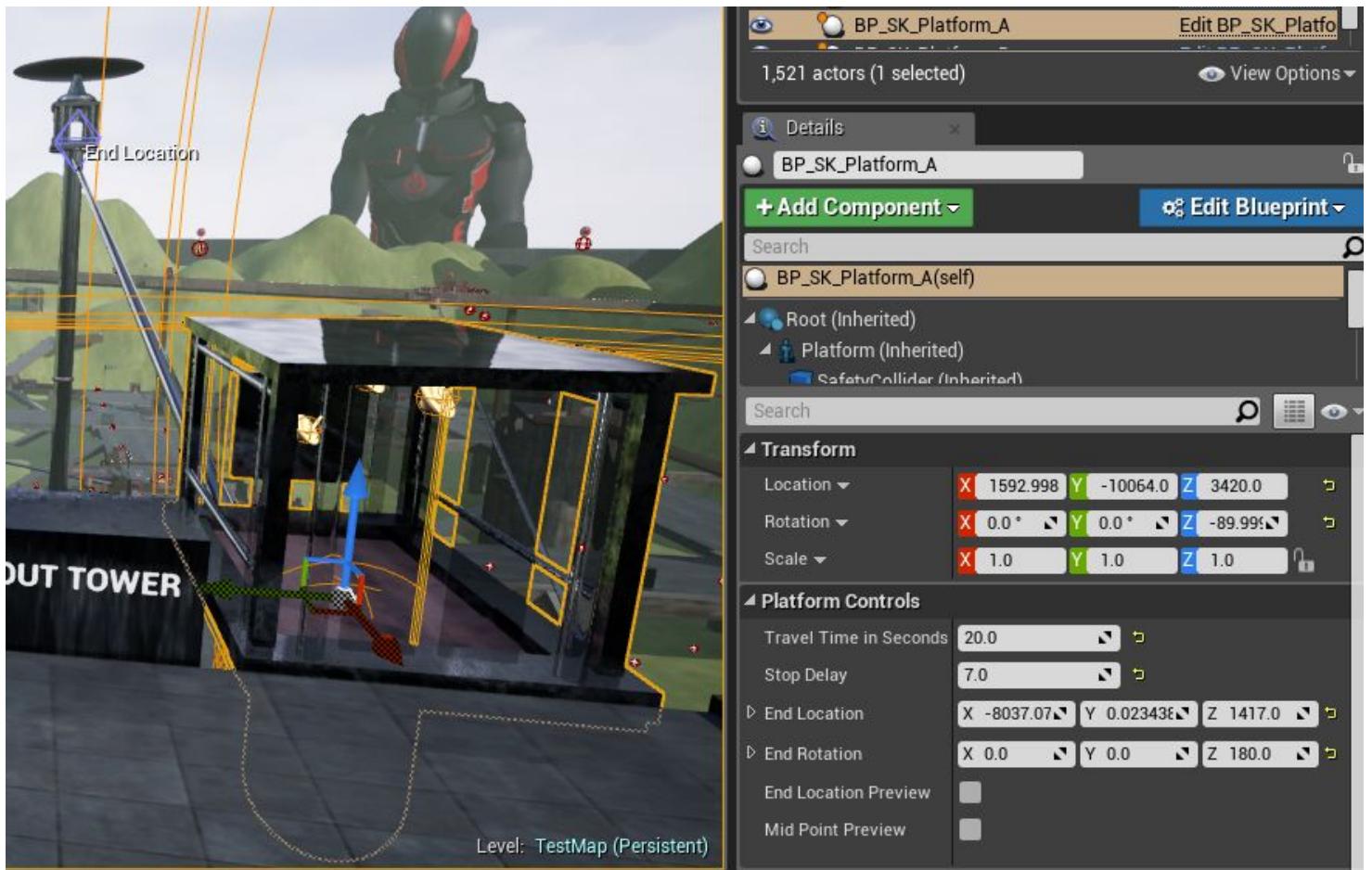
There are multiple automated Elevator/Platform Blueprint types, each with triggered audio and different abilities. They can be duplicated in their folder to make new versions and change their meshes, modify their appearance and functions. Added to the Map they have individual parameters that can be set.



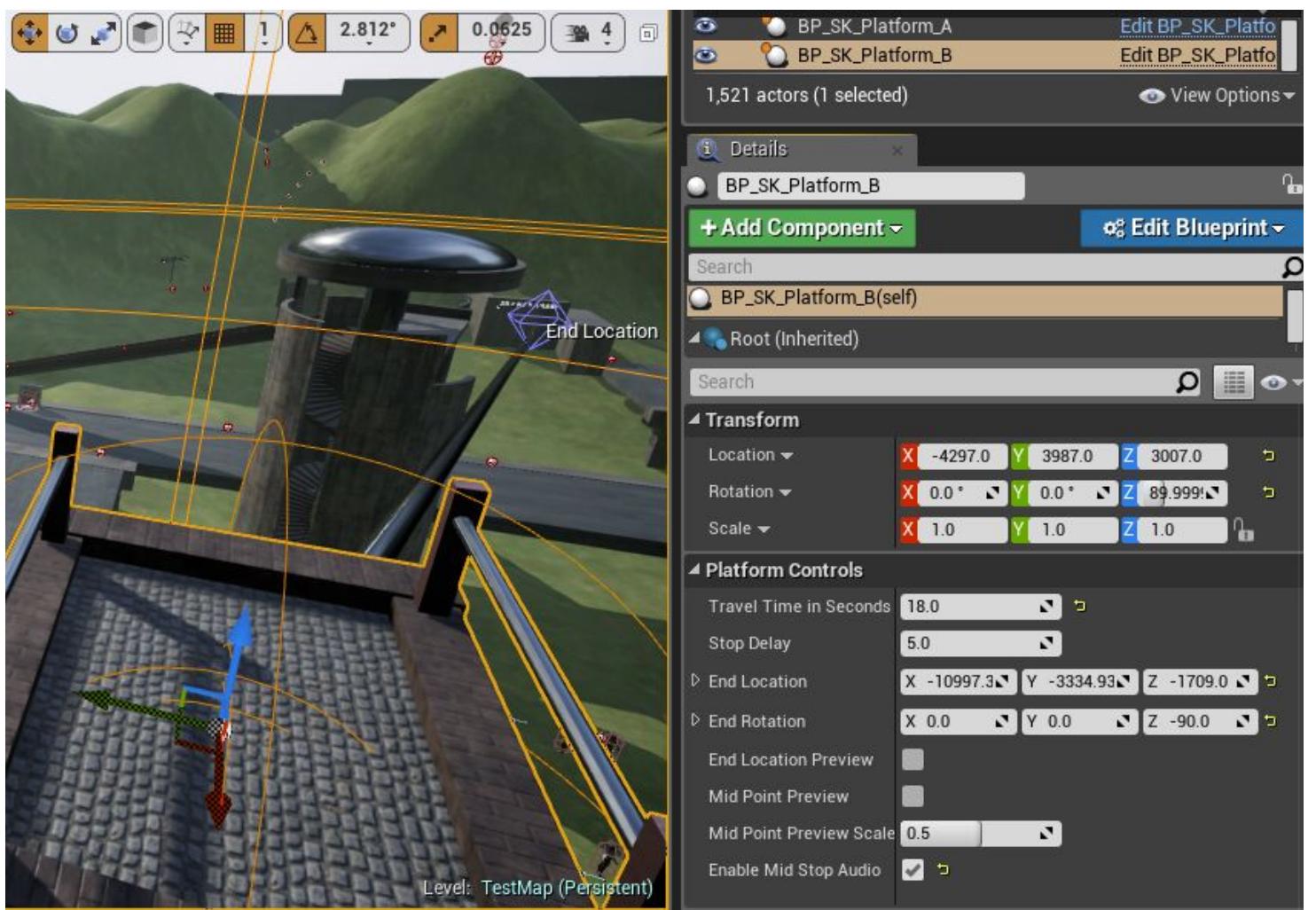
"BP_SK_Elevator" is a basic automated elevator(Though it can also travel sideways, the mesh is designed to be vertical. See the notes above on duplicating the BP.). It can be placed anywhere in the Map and set its end location, travel time and delay time to stop at either end. The "End Location" object can be selected in the viewport and positioned manually for convenience and the "End Location Preview" will visually teleport it to the "End Location" for better accuracy in setting it.



"BP_SK_Platform" adds the ability to travel and rotate in any direction. It can be placed anywhere in the Map and set its end location, end rotation, travel time, stop delay. The "End Location" object can be positioned manually for convenience and the "End Location Preview" will visually teleport it to the "End Location" for better accuracy in setting it. Additionally, "Mid Point Preview" will set the platform to the halfway point of travel as another visual aid.



"BP_SK_Platform_A" has the same functions as "BP_SK_Platform", with the addition of automated opening and closing doors. Please see the Blueprint for details.



"BP_SK_Platform_B" has the further added features of a stop in the middle of its travel with triggered audio. The mid stop audio can be turned on and off as desired. When "End Location Preview" and "Mid Point Preview" are enabled, the "Mid Point Scale" slider will show the platform continuous location from start to end with the value 0 to 1.

NOTE: A simple example would be 0 at start and 90 or 180 degrees at end and 50% rotation at mid stop. However the example in the "TestMap" is more advanced and illustrates the power of these functions. The Mid Stop Location is set to a simple .5 halfway(it could be anything) but the Mid Stop Rotation is actually -73 deg while the End Rotation is -90. The mid stop relative location and relative rotation are set with the two Timeline graphs in the Blueprint, but the "Mid Point Preview Scale" doesn't actually show the results of the Timeline curves, it shows a linear interpolation between the 0-1 start and end point values. So to work out the Rotation curve settings, I temporarily set the End Rotation to double the -73 deg. mid stop value(-146) to check the mid platform alignment, then did some basic math to figure out the correct values for the Rotation Timeline graph which is 0 to 1(0-100%):

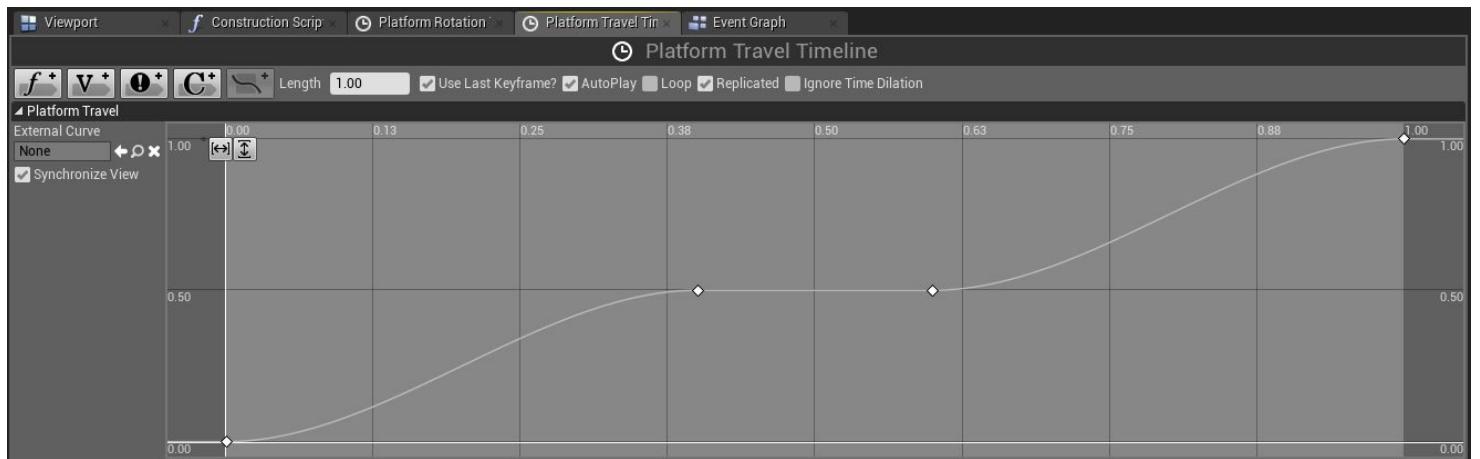
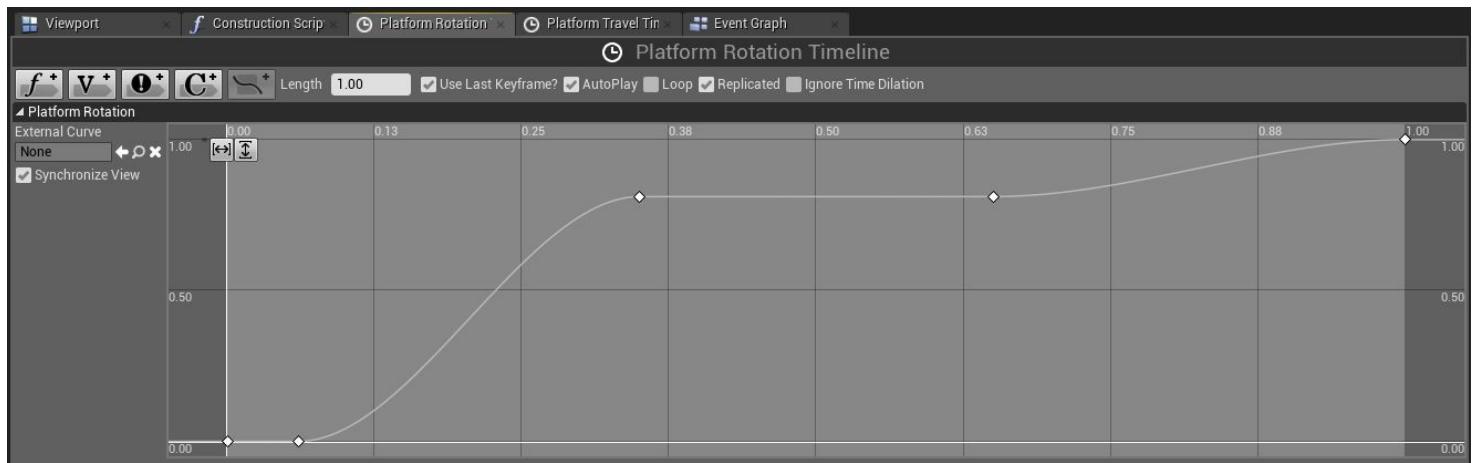
$$90\text{deg} - 73\text{deg} = 17\text{deg} \mid 90/17 = 5.294 \mid 100/5.294 = 18.888\% \mid \text{inversely } 81.111\%$$

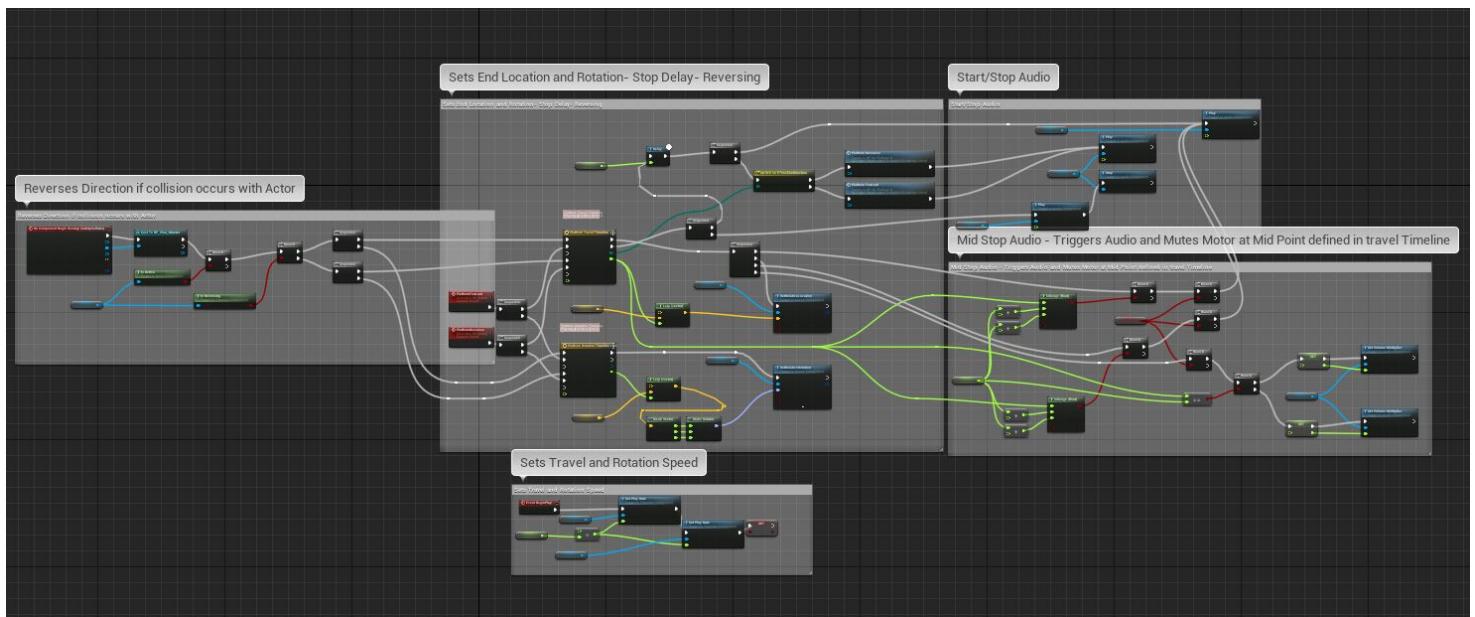
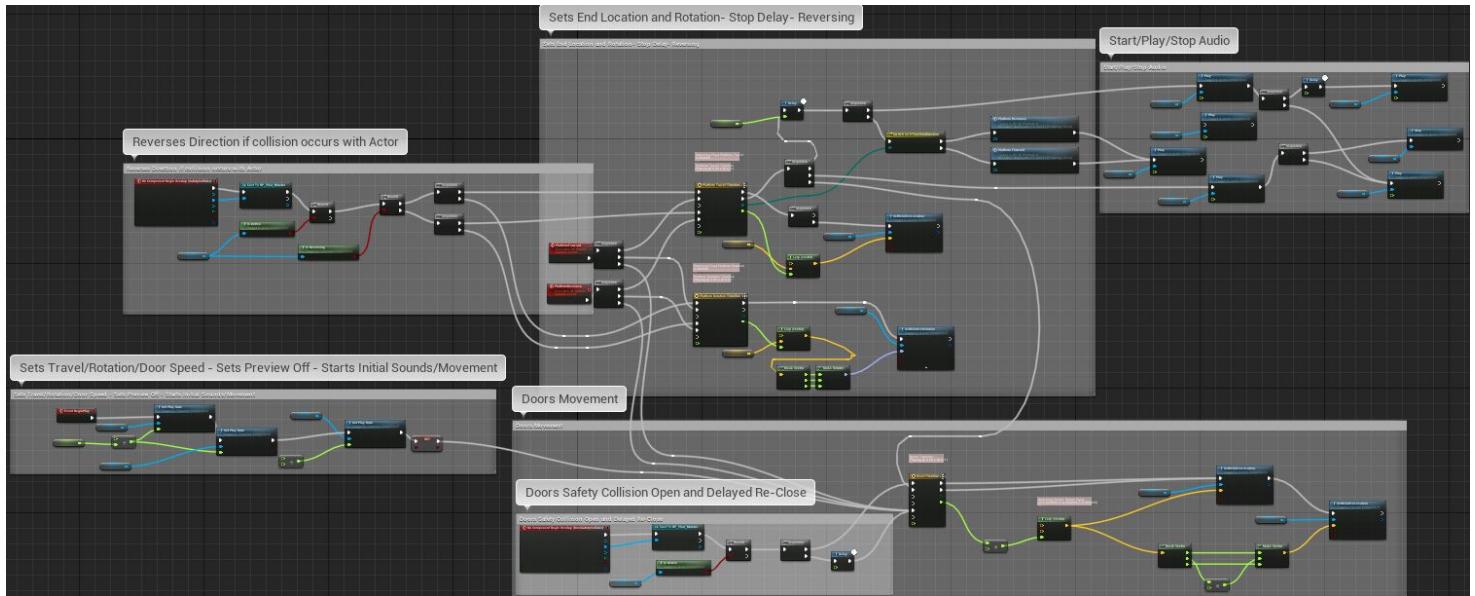
From the start to the mid point it needs to rotate 81.111% of the end point set value of -90 degrees, hence a value of .8111 in the Rotation Timeline curve for the mid point. The mid Location is easy in this example, exactly at the halfway point, therefore a Travel value of .5 in the Travel Timeline.

The flat “stop” region in the Rotation curve versus Location curve is slightly wider so there is no Rotation change while the platform is moving in and out of the center station. The width of the stop regions also dictates the relative length of how long it stops for.

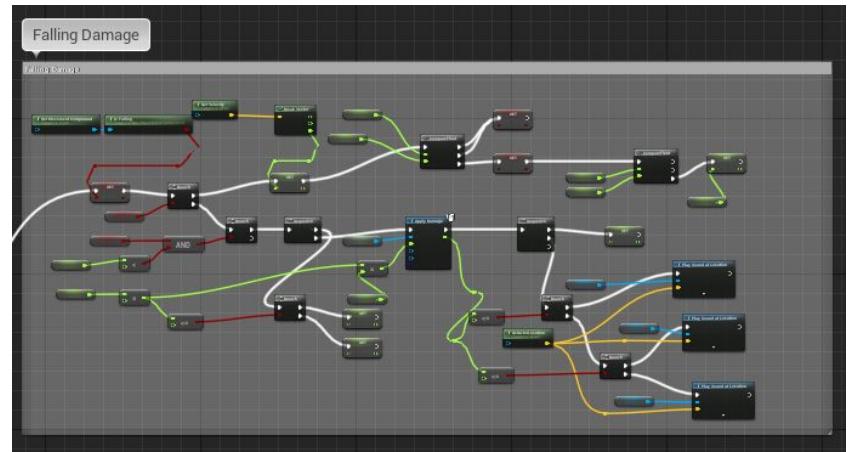
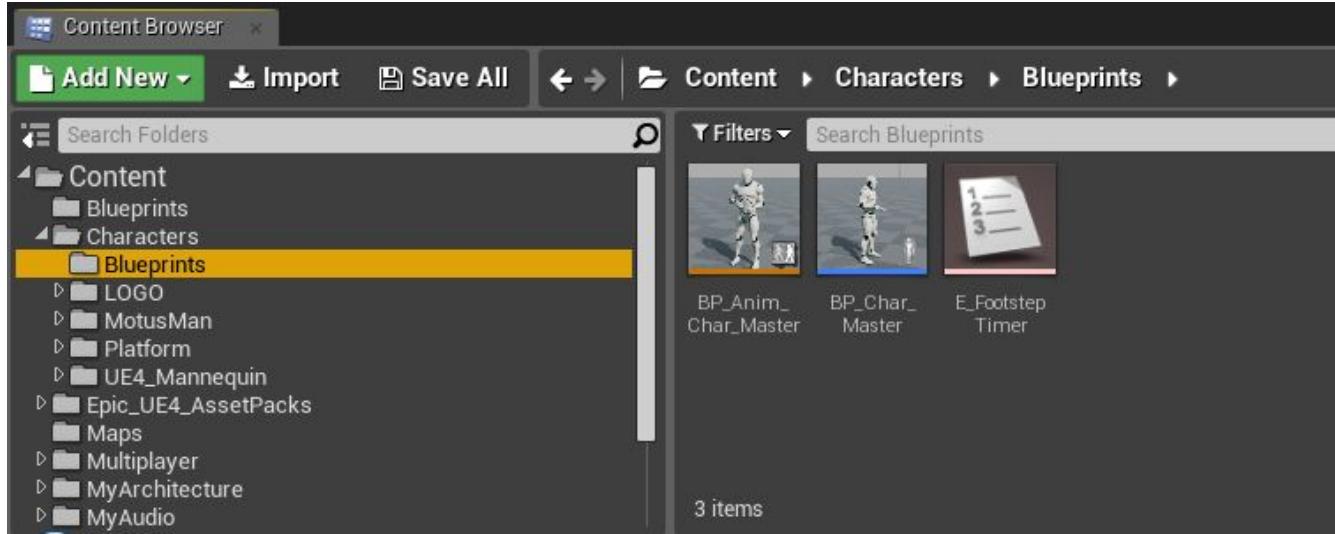
Hopefully I explained all that so it makes sense. Please look at the Blueprints and Timeline graphs to get a feel for the process. A basic 90 or 180 is pretty simple. I may make a video going over utilizing more complicated angles and other than exactly halfway mid points. I use flat tangents for the keys so there are smooth start and stop transitions, but the curves can be set any way you want for the desired look.

All the Platforms use Timeline graphs, please study the Blueprints and see how variables and settings can be modified for different actions.





PLAYER FALLING DAMAGE

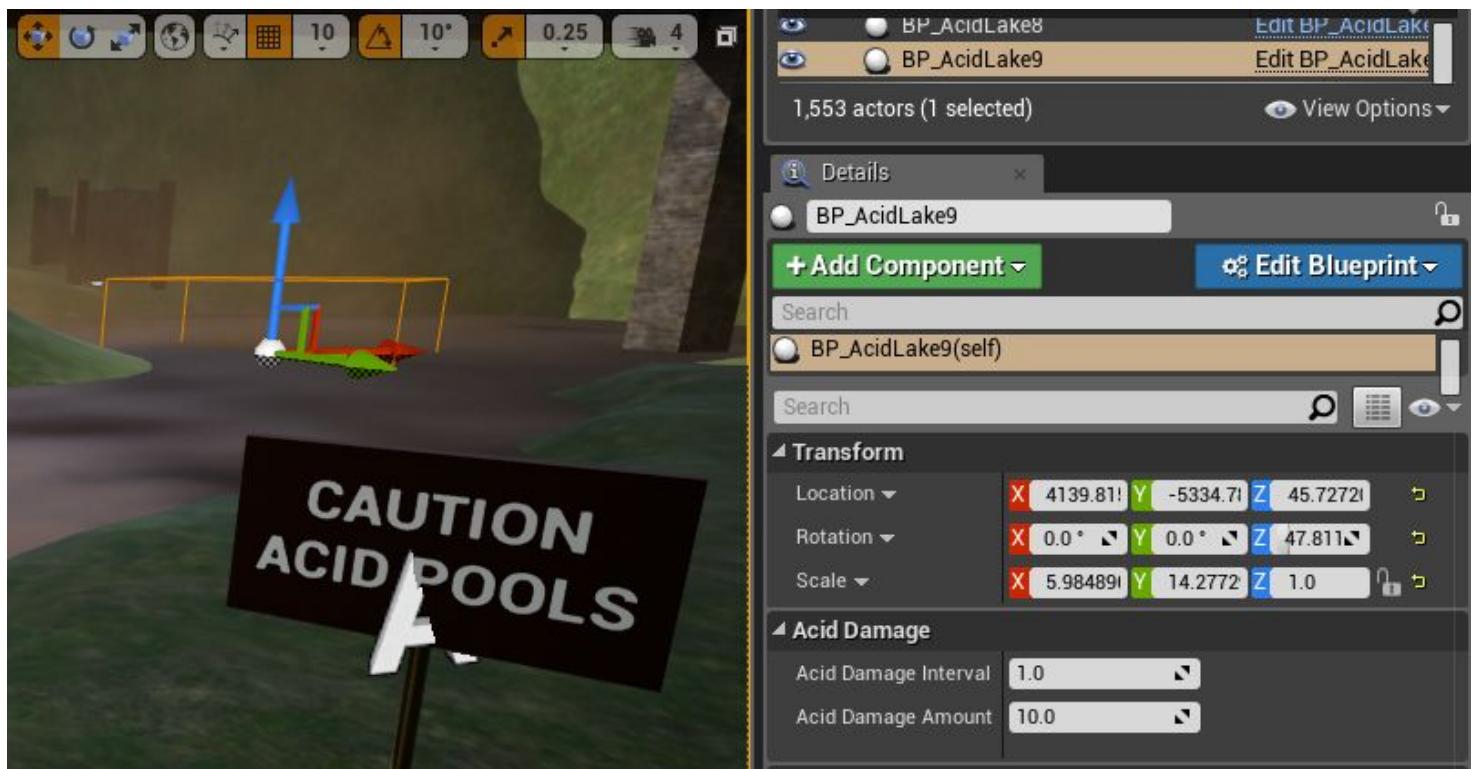


Player falling damage is handled by relative speed (negative velocity). Longer the fall, more speed. A threshold is set for a minimum velocity where damage can occur. Above that threshold another threshold is set to switch from fast falling to really fast falling, so two different damage multipliers can be set for both ranges - a smaller multiplier for less and more progressive damage, and a higher multiplier capable of potentially killing the player in one fall. The multiplier is applied to the velocity and damages the player with the resulting value, when it is verified the player was in the air and falling too fast and is now in contact with the ground.

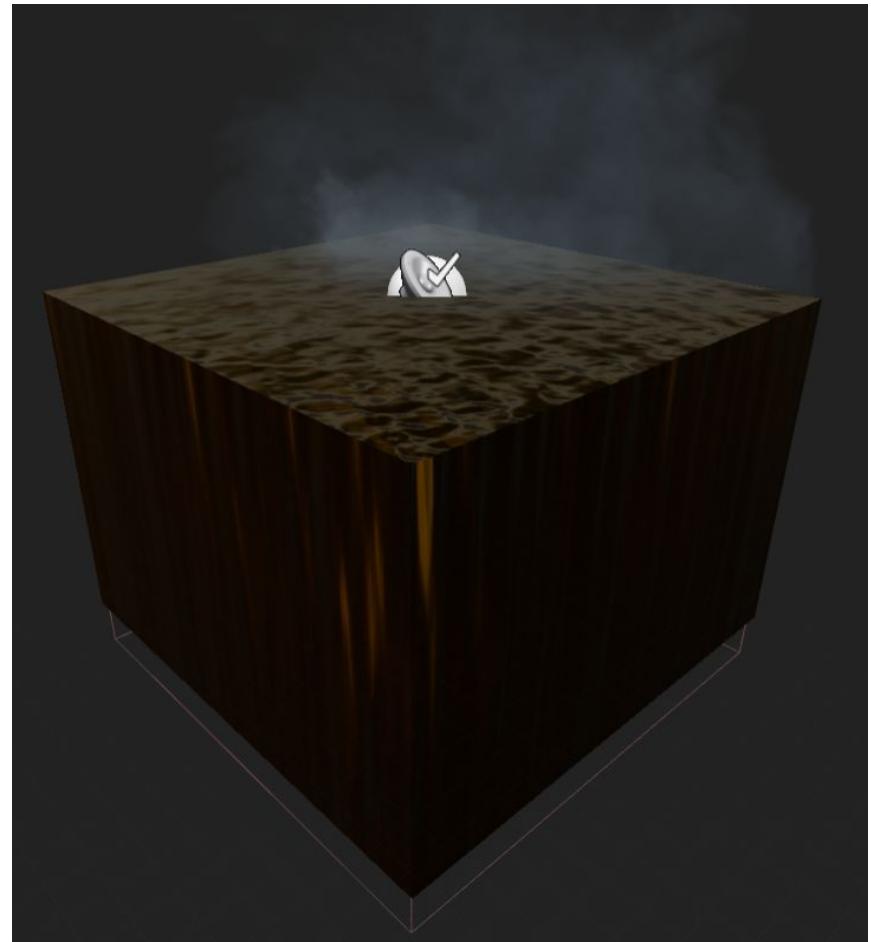
The damage the player receives is also split into three thresholds to trigger the appropriate sound for the severity of the landing: "Ooof!", "Aarrgh!", and "AAUURRGHH!!" when you just about lose all your health at once.

Check out the flow of logic and math in the "BP_Char_Master" Blueprint. Thresholds and Multiplier values can be set as you like.

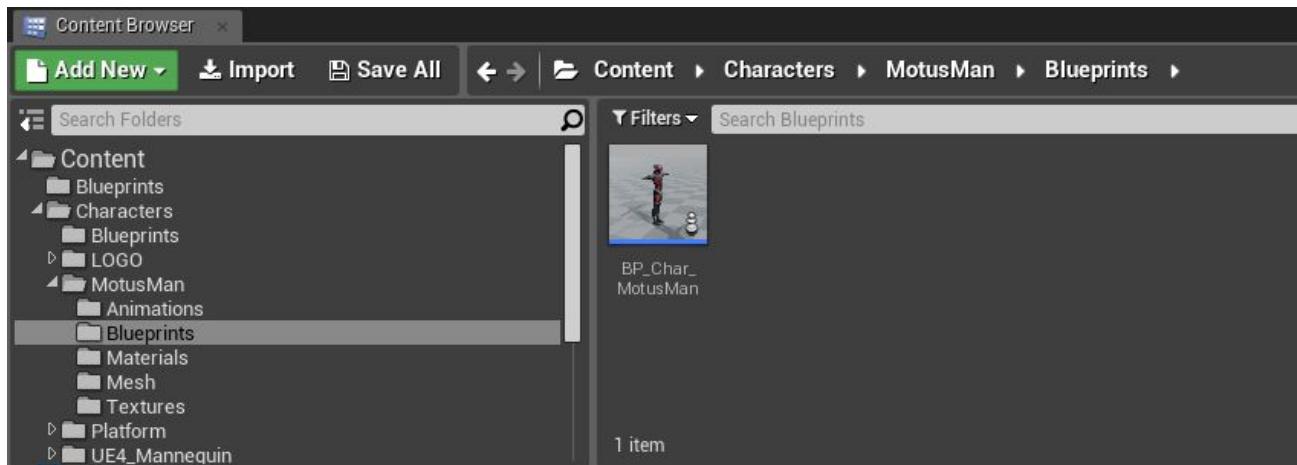
ACID LAKE DAMAGE



Player is damaged when in contact with a "BP_Acid_Lake".
When collision overlap begins a timer starts pulsing and damaging a set number of health points with each pulse. Heartbeat audio is played as feedback to the player. When collision overlap ends(player leaves the acid) the timer stops and the audio stops.
"Acid Damage Interval" and "Acid Damage Amount" variables can be set for each instance in the Map.
1 second and 10 health points are defaults.



MOTUSMAN NPC's



"BP_Char_MotusMan" added to the map as NPC's have a few individual settings.

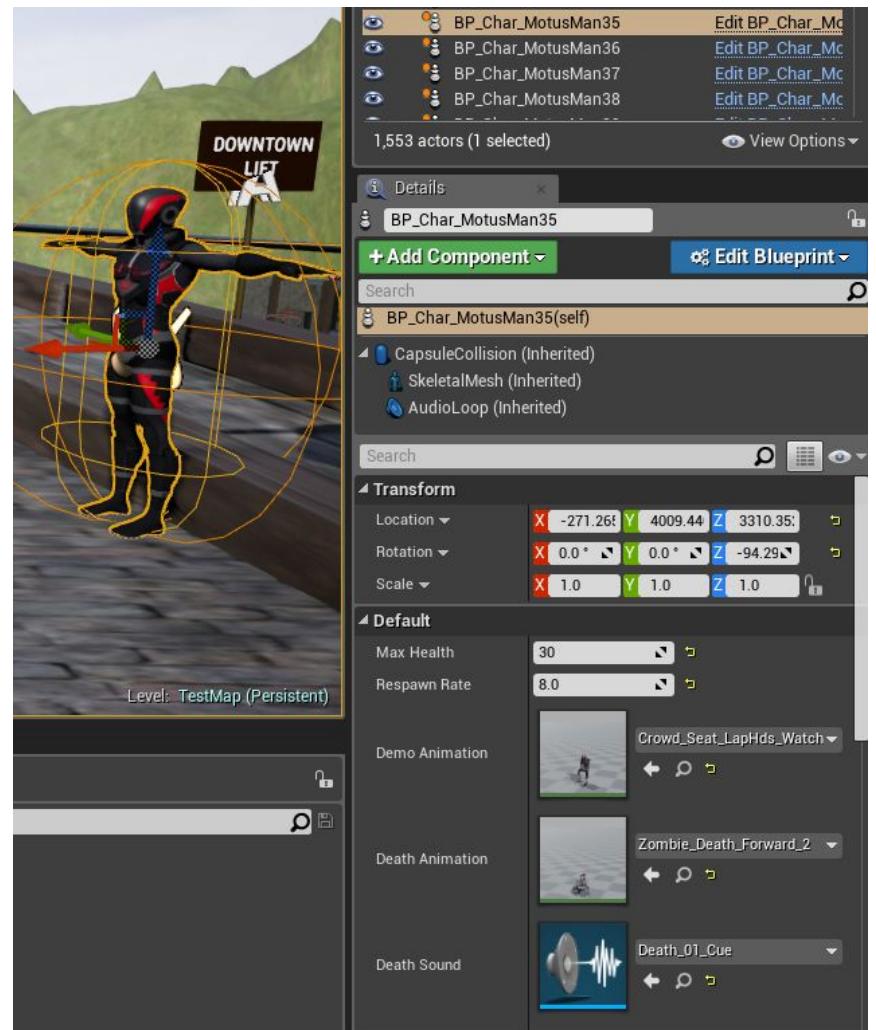
Max Health and Respawn Rate for ease of killing them and how fast they reappear.

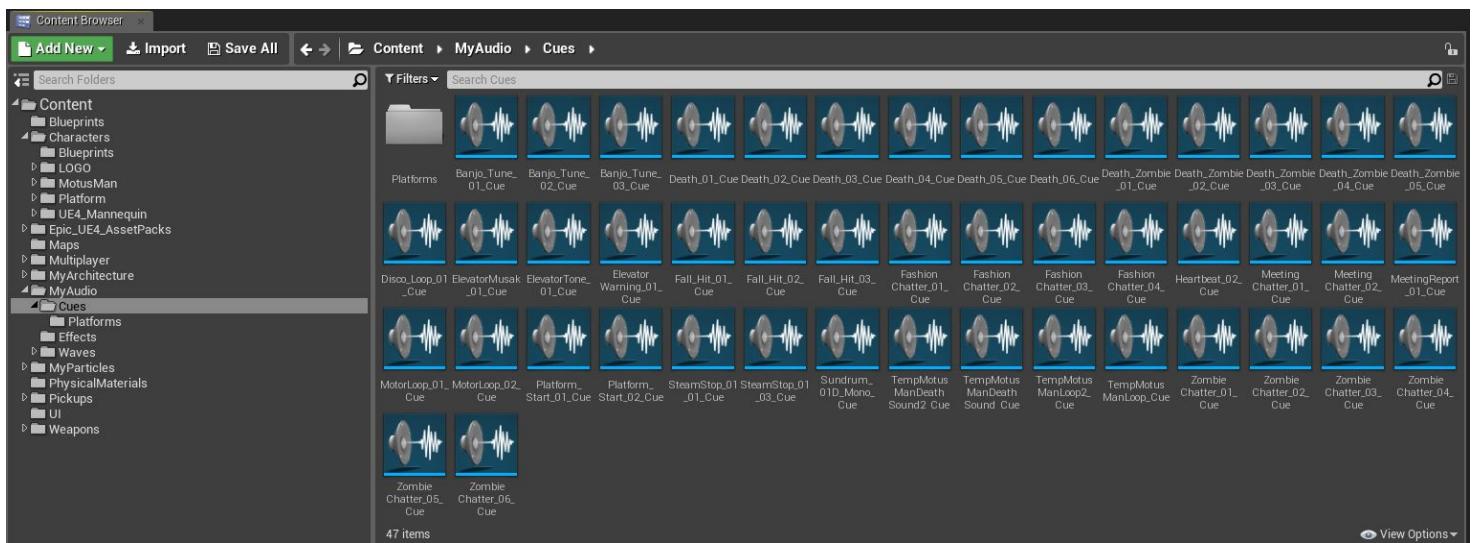
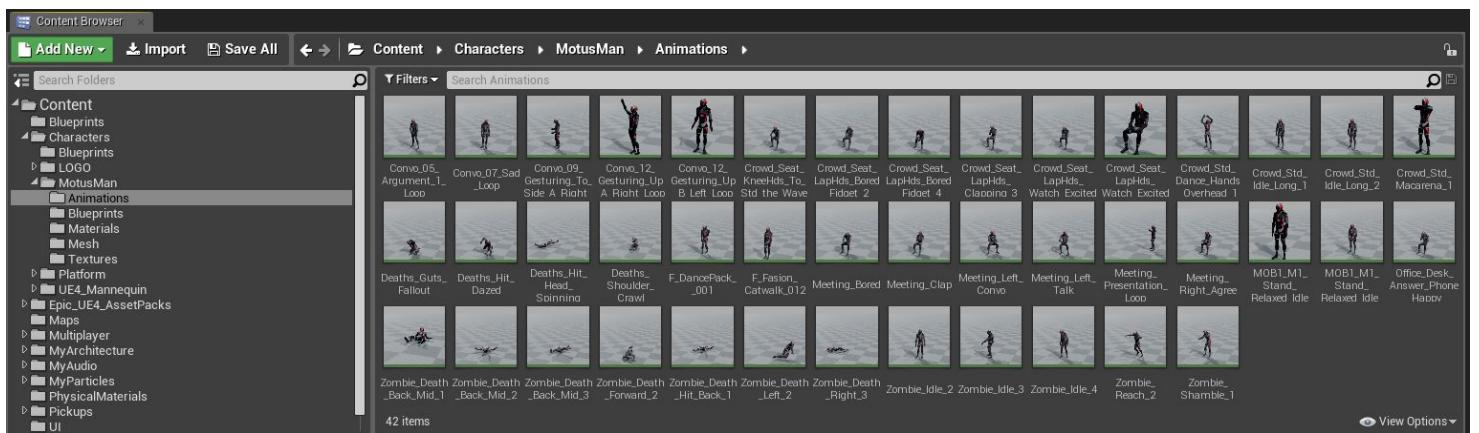
You can choose what Demo Animation you want it to loop, what Death Animation to play, and what Death Sound to play.

Highlighting the "Audio Loop" you can also set what sound you want it to loop while he is alive.

There are a lot of demo animations and audio files we recorded to choose from, some of it pretty entertaining. He also has a normal and a "Zombie" texture to choose from.

Have fun.





MotusMan is fully set up as "Humanoid" and ready for the Retarget Manager if you wish to transfer his animations to the UE4_Mannequin or vice versa. MotusMan is also setup for collisions and ragdoll behavior.

FYI Most all of the MotusMan demo animations are available separately as packs for sale already on the UE4_Mannequin.

NOTES ON PACKAGING

Be sure to watch the video on "Distribution Packaging" so as not to miss any needed steps and caveats.

To package for Steam play, make sure the "DefaultEngine.ini" has entries in it as described in this doc here: <https://docs.unrealengine.com/en-US/Programming/Online/Steam>

And place the included "steam_appid.txt" file in the correct binaries folder of the build directory.

For example: \WindowsNoEditor\MP_TPS_Template\Binaries\Win64\

By default, the packaged Game.exe will not automatically start up Steam, so it needs to be already running in the background for Steam gameplay.

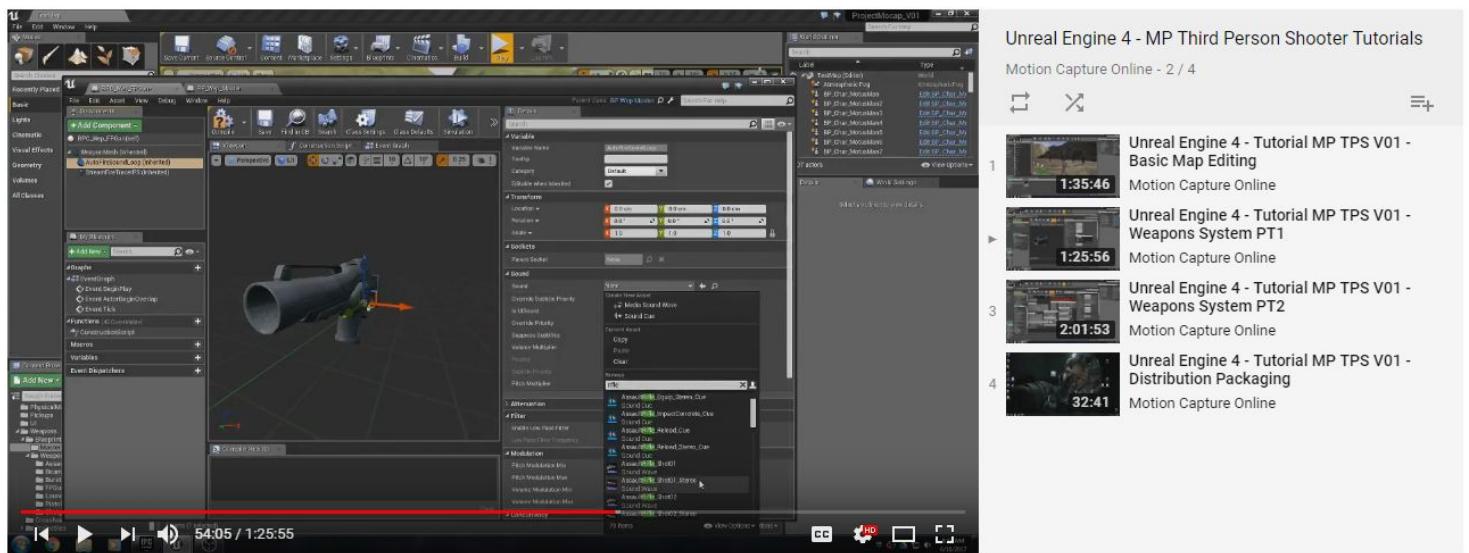
CORE GAMEPLAY BLUEPRINTS

The Player movement, weapons, multiplayer replication, and other deep functions of the Project, "BP_Char_Master" and other Blueprints, are quite complex and too deep to go into here. Please look at all the Comments and notes within the Blueprints, and watch the initial tutorial videos our lead programmer and UE4 guru [John Galt](#) aka "iamjohngalt1975" made.

Check out the Mocap Online YouTube Playlist here:

[Unreal Engine 4 - MP Third Person Shooter Tutorials](#)

https://www.youtube.com/watch?v=EMkfCCFmtpI&list=PLOM5MZk_S5NpjVrpwK3J6S-YiG0mwxjZ





And visit John Galt here:

<https://www.youtube.com/channel/UCpuKe9wEgwyusqni1ZnWdBQ>

John Galt
817 subscribers

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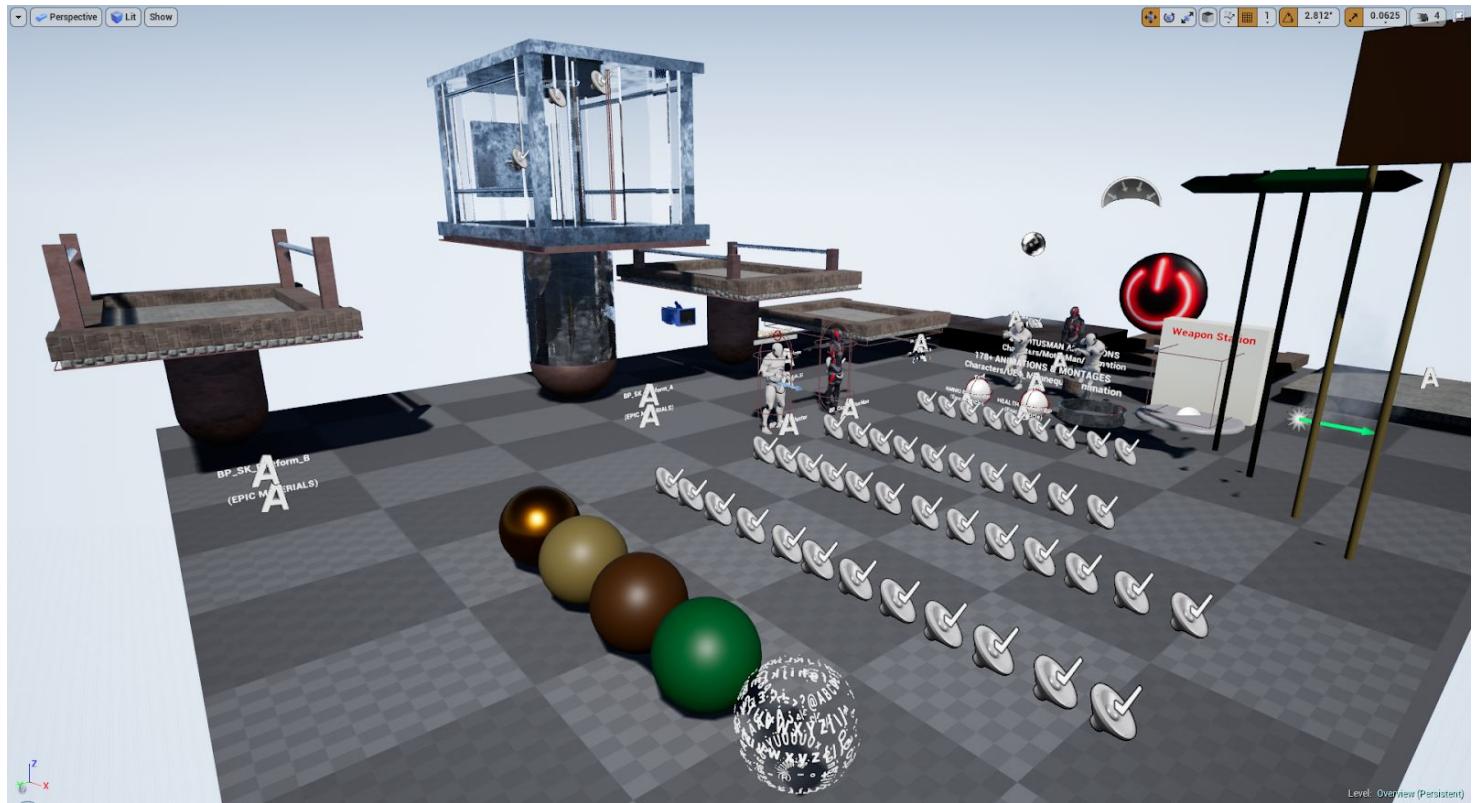
Uploads PLAY ALL

Unreal Engine 4 - (Tutorial) Paragon Characters - 163 views • Streamed 1 week ago	Unreal Engine 4 - (Tutorial) Paragon Characters - 195 views • Streamed 1 week ago	Unreal Engine 4 - (Free Project) Steam Base Adding 51 views • Streamed 1 week ago	UE4 Jetpack Animation Set - Adding To My Steam Base 24 views • Streamed 1 week ago	UE4 Jetpack Animation Set - **Update** Now Live On UE4 25 views • Streamed 1 week ago

MANY THANKS again to John Galt for his continued guidance and help, and to the entire Unreal Engine Community for the wealth of knowledge to learn and extrapolate from.

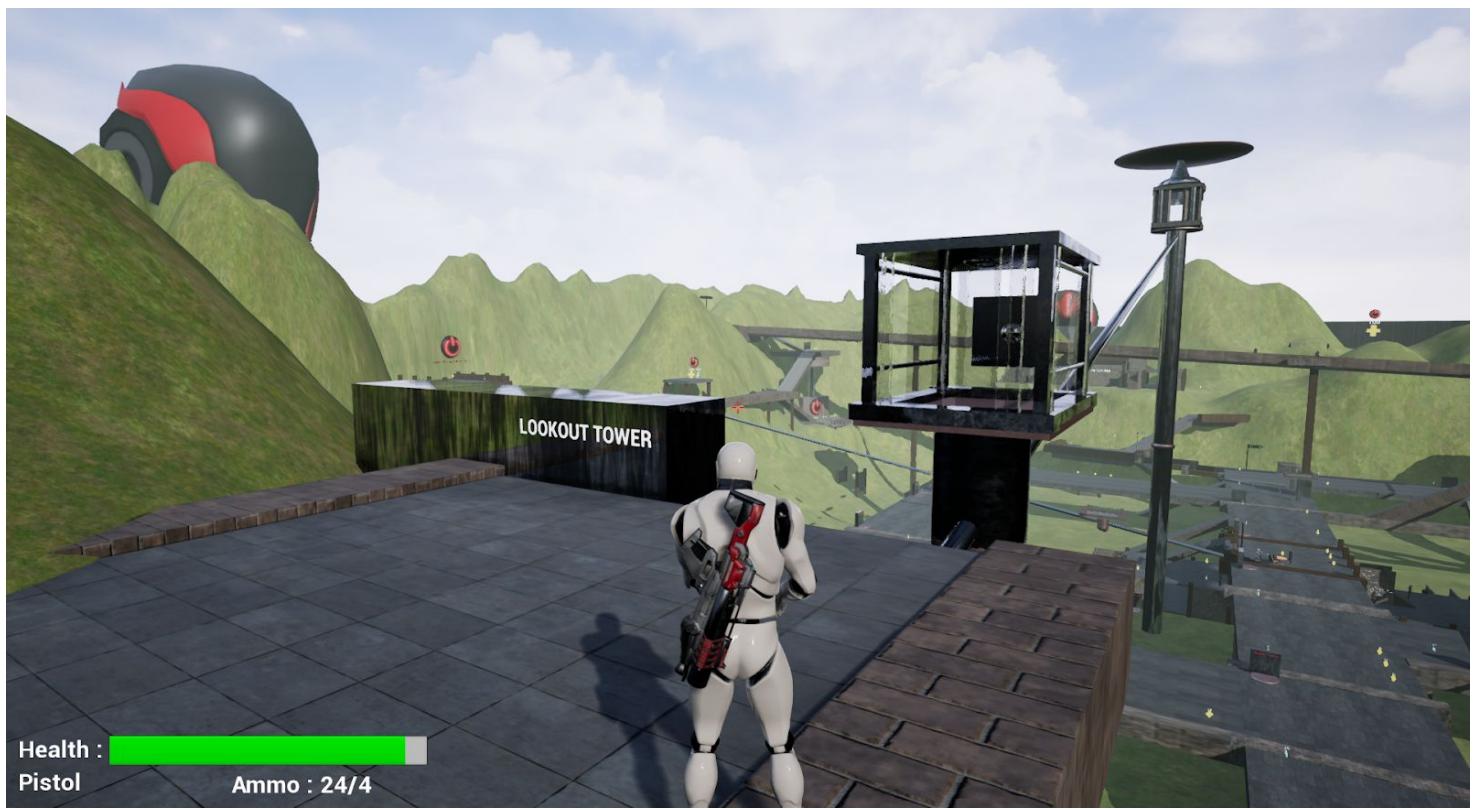
OVERVIEW MAP

FYI the "Overview" Map lays out best we could with what unique items we are providing - Audio, materials, blueprint actors, animations, meshes, etc. Please check out all the editor folders.



Some Map Screenshots:











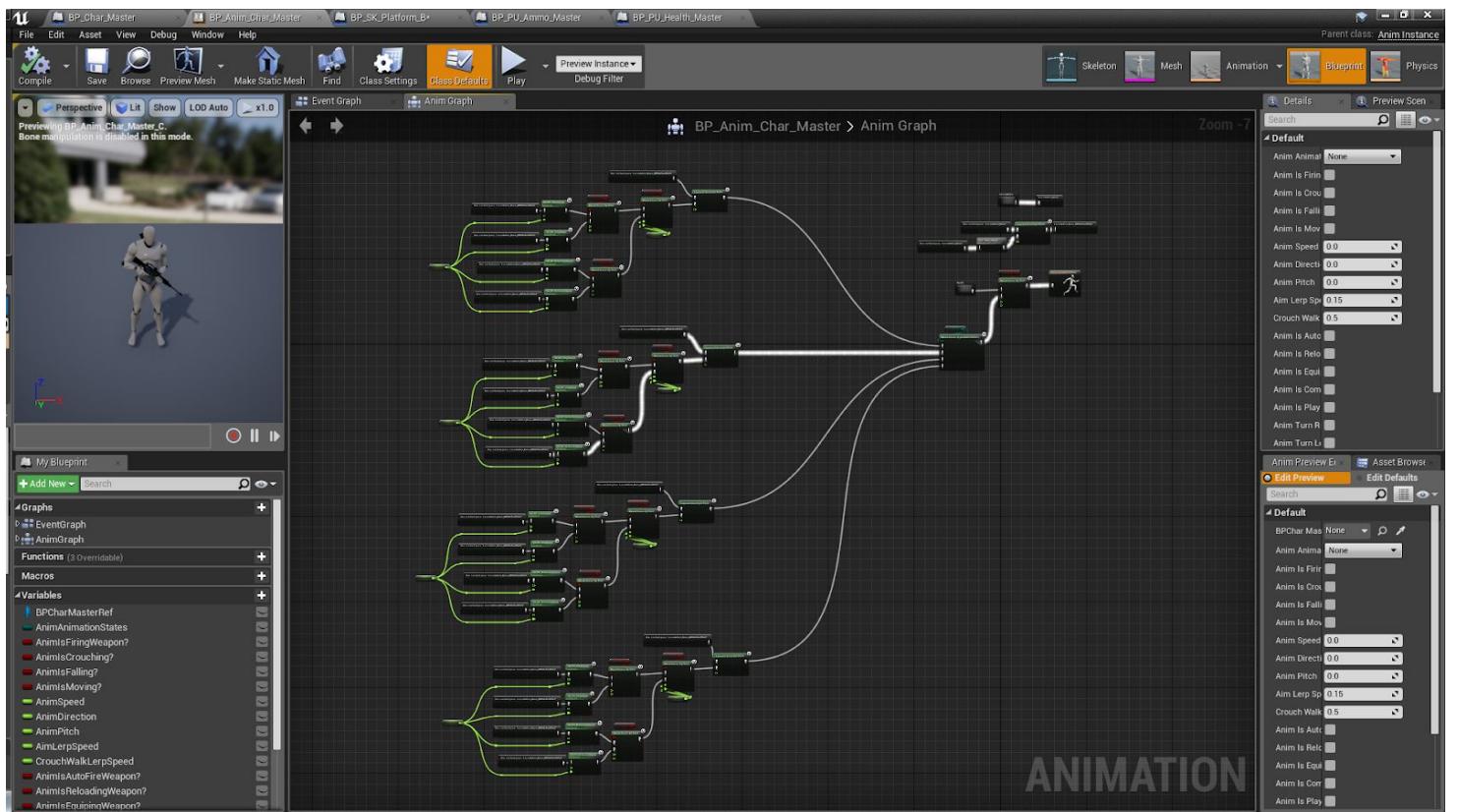




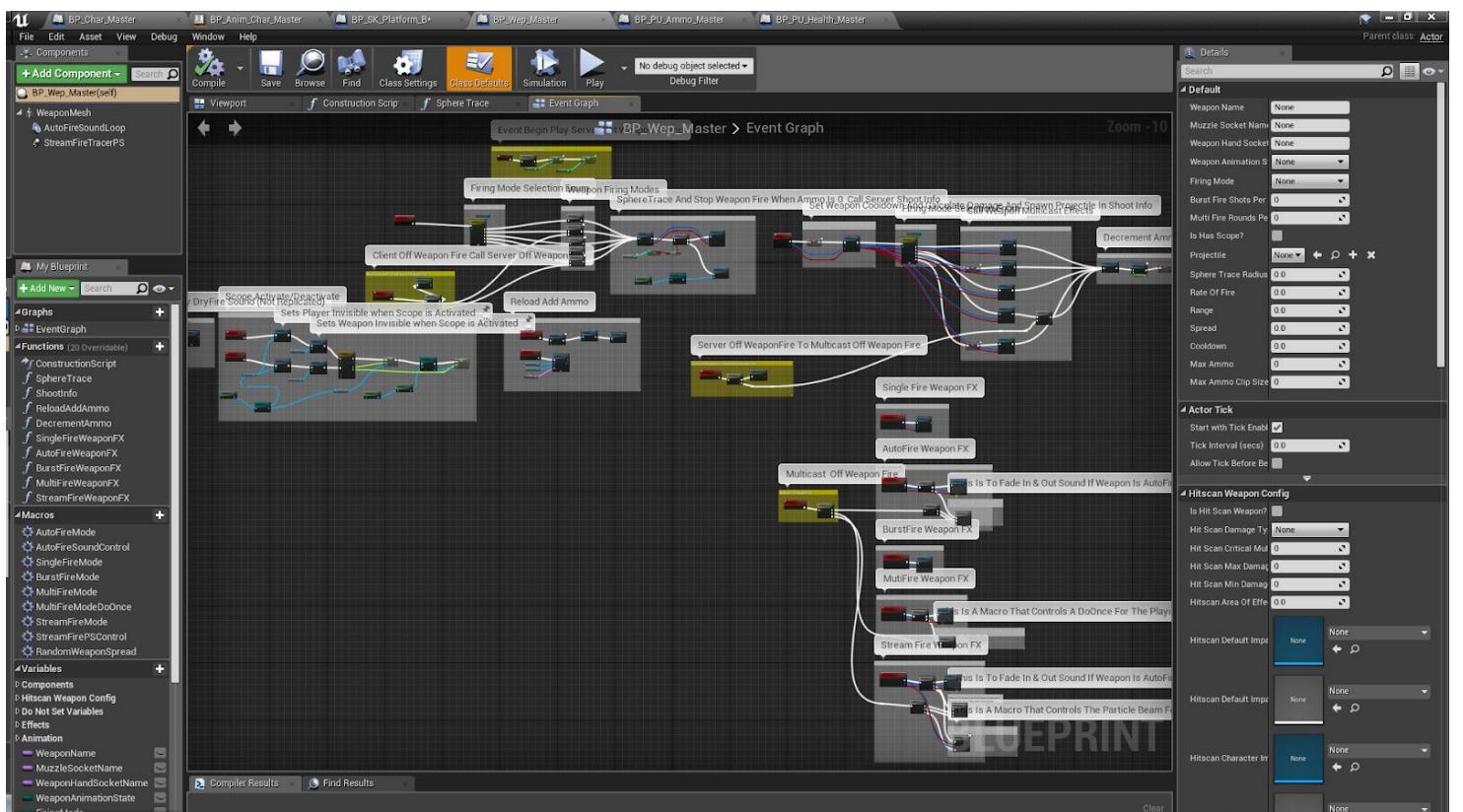


Blueprint Editor View:

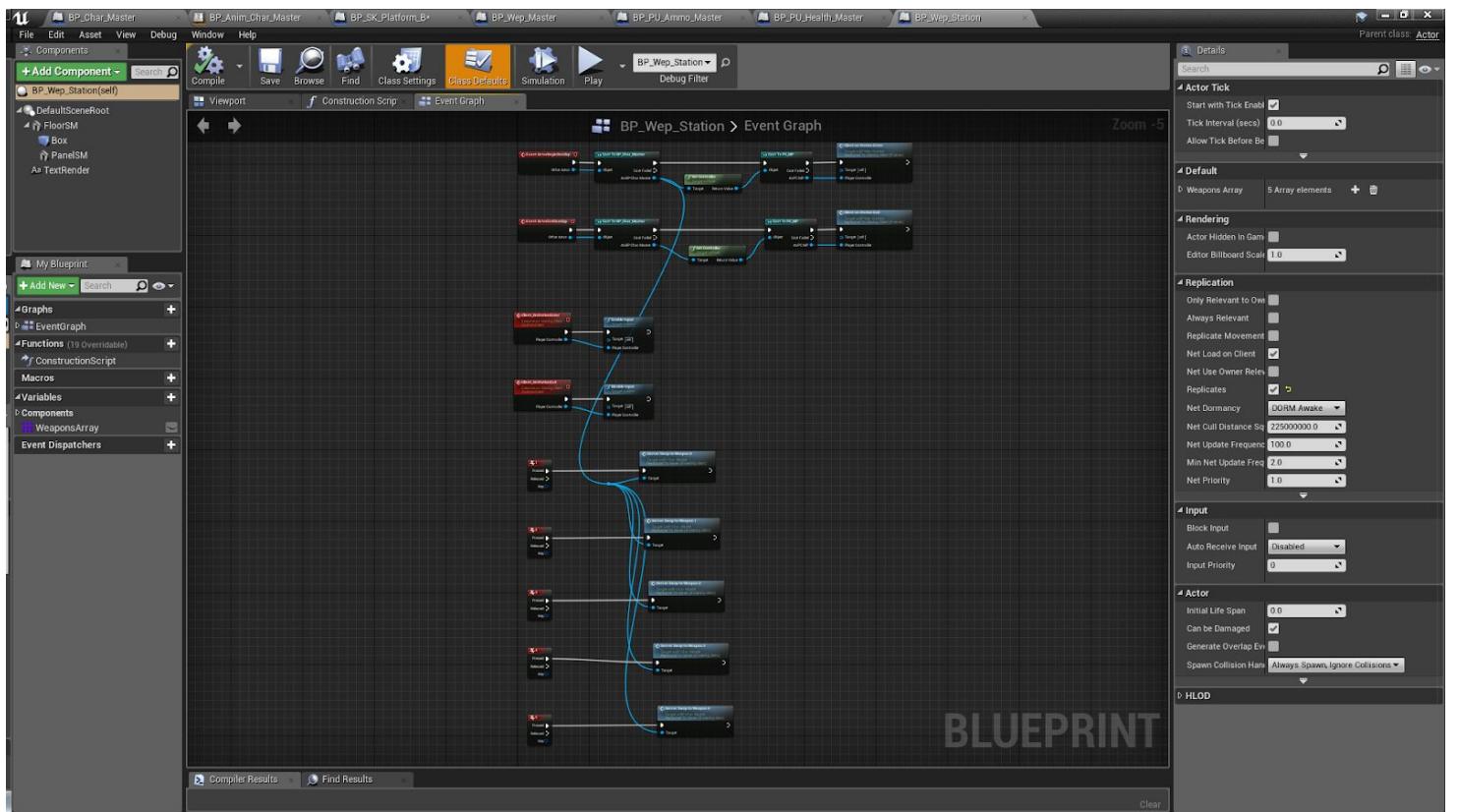
The screenshot shows the Unreal Engine Blueprint Editor interface. The central workspace displays the Event Graph for the 'BP_Char_Master' blueprint. The graph contains numerous nodes representing events like 'EventBeginPlay', 'EventTick', and various input events ('Crouch Input (Replicated)', 'Jump Input & Play Jump Land Sound (Replicated)', 'Mouse Input (Replicated Turn In Place)', etc.). These nodes are interconnected by wires, showing the logic flow between them. To the right of the graph, the 'Details' panel shows properties for the 'Character' class, including Max Health (100), Rifle Weapon (set to 'BPC_Weap_Assault'), and various sound and movement settings. The bottom right corner of the editor has the word 'BLUEPRINT' printed in large, light-colored letters.



ANIMATION



BLUEPRINT



<https://mocaponline.com/products/ue4-multiplayer-third-person-shooter-blueprints>

<https://mocaponline.com/products/ue4-mocap-mp-tps-blueprints-free-demo>

MOTION CAPTURE ONLINE / MOTUS DIGITAL

<http://www.motioncaptureonline.com>

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NOTE: Elements from the Free - "Shooter Game Pack" and Starter Content © Epic Games - including audio cues/.wav's, materials, particles, textures, objects - are included and used as examples.