



Unreal Fest 2024 Seoul

UEFN For Unreal Devs

Chris Murphy
Senior Technical Artist
Epic Games

Who am I?

Started getting into Game Dev with
modding and level editing

Mostly tinkered with Duke Nukem 3D, Command
and Conquer, UT99.

Worked in Indie Games

..and sometimes we cobbled things together..

Epic Games for the last 8 years

Worked hard at developing teams to do things the
'Epic way' in making games.

What is UEFI?

What is Unreal Editor for
Fortnite?



COMPLETE



FIND YOUR CREW



Unreal Editor for Fortnite is
a way to **develop and**
publish content into
Fortnite

But it's also very, very close
to the **same Unreal Editor**
you already know.

Why build in **Fortnite**

- Household name with 100 million MAU
- More than $\frac{2}{3}$ of players spend time in creator-built content every week
- Underpinned by a powerful engine
- Ecosystem of tools that can be leveraged to make the best game possible (FAB, MetaHuman, and more)
- All you have to do is **create and publish**



New Terminology

Build custom game logic with **devices**

Devices are the primary building blocks for authoring game mechanics. Different devices do different things and can be combined to **build unique functions**.

You can customize devices to build complex components that can then be combined again for your own unique **game mechanics**.



Think of Devices as Actors

Devices are core actors in UEFN that are built on top of the existing Fortnite framework. They have a built in simple messaging system for triggering other devices that can be used to develop simple gameplay.



Think of Devices as Actors. For Example:

Player Spawns

Player, Vehicle and Item Spawners are all devices.

Logic Gates

No Blueprint but you can control fundamentals without touching code through actors such as Timers, Conditionals and more.

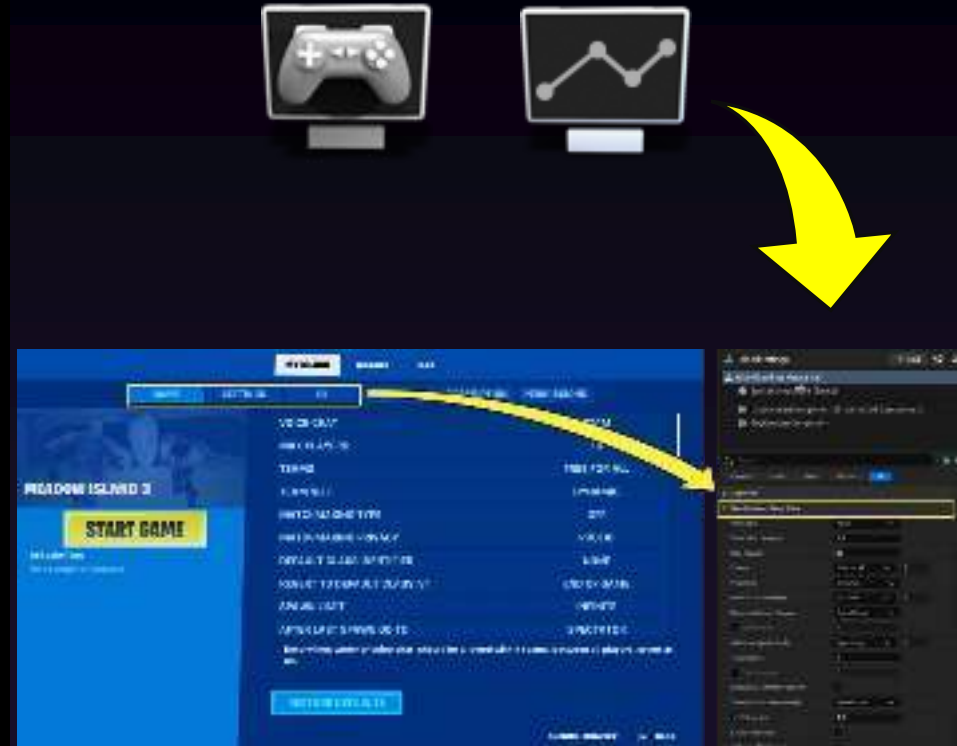
Triggers

Trigger Actors with team checking and other extended behavior are housed in devices.



Game Mode and Game State have been largely abstracted into Island Settings

In Unreal the core rules of your game are set up through the Gameplay Framework. Because the Game Mode and Game State are functioning under-the-hood in Fortnite you generally interact with



Extend game logic with Verse

Designed with rigor sufficient for an
open standard

Performant for writing real-time, open-
world multiplayer games

The language is built with an emphasis
on gameplay

It's a multi-paradigm language; it uses
the best of functional programming,
object-oriented programming, and
imperative programming

```
using { /Fortnite.com/Devices }
using { /Fortnite.com/Characters}
using { /Fortnite.com/Game}
using { /Verse.org/Simulation }
using { /UnrealEngine.com/Temporary/Diagnostics }
```

```
Flag_Verse_demo := class<concrete>(creative_device):
```

```
    #Variables
    @editable CaptureFlags:[]capture_item_spawner_device =
    array{}
    @editable PlayerVisualEffect: visual_effect_powerup_device =
    visual_effect_powerup_device{}
    @editable PlayerVisualEffectCancel:
    visual_effect_powerup_device = visual_effect_powerup_device{}
```

```
    #Core Gameplay Loop
```

```
    OnBegin<override>()<suspends>:void=
        for(Flag: CaptureFlags):
            Flag.ItemPickedUpEvent.Subscribe(GrantVisualEffect)
            Flag.ItemDroppedEvent.Subscribe(StopVisualEffect)
            Flag.ItemCapturedEvent.Subscribe(StopVisualEffect)
```

```
    #Function to apply a Glow to the player
```

```
    GrantVisualEffect(Player : agent) : void=
        PlayerVisualEffect.Pickup(Player)
```

```
    #Function to remove the Glow from a player
```

```
    StopVisualEffect(Player : agent) : void=
        PlayerVisualEffectCancel.Pickup(Player)
```

But it is new, so if it's
necessary for your project
you will need to upskill in it.

The good news is
that it's **not as**
scary as you think



FORTNITE Discover My Library Create News Battle Pass Crew More

Chris Murphy **Staff**

DEV COMMUNITY

UEFN & Creative


Unreal Engine 518K | **UEFN & Creative 17K** | Epic Games Store 120 | Capturing Reality 2K | MetaHuman 2K | Twinkl 1K

Category	Posts	Replies	Preview
Getting Started & Setup	643	2,076	[URGENT] Can't open a proje... 2h ago by princessrepar
Programming & Scripting	2,732	9,583	Can I use C++ to code in UEF... 20h ago by Eufemeyer
Asset Creation	394	1,199	How to make an custom obje... 2d ago by jere
World Creation	735	2,212	Optimize vertical level 7h ago by floof

Forum Highlights

1720-4907-6103

ANNOUNCEMENTS

- Fortnite Ecosystem v30.40 
- Explore How UEFN Was Used to Create "Metallica: Fuel, Fire, Fury." in Fortnite! 
- Fortnite Ecosystem v30.30 
- Fortnite Ecosystem v30.20 

RECENT TUTORIALS [View all](#)

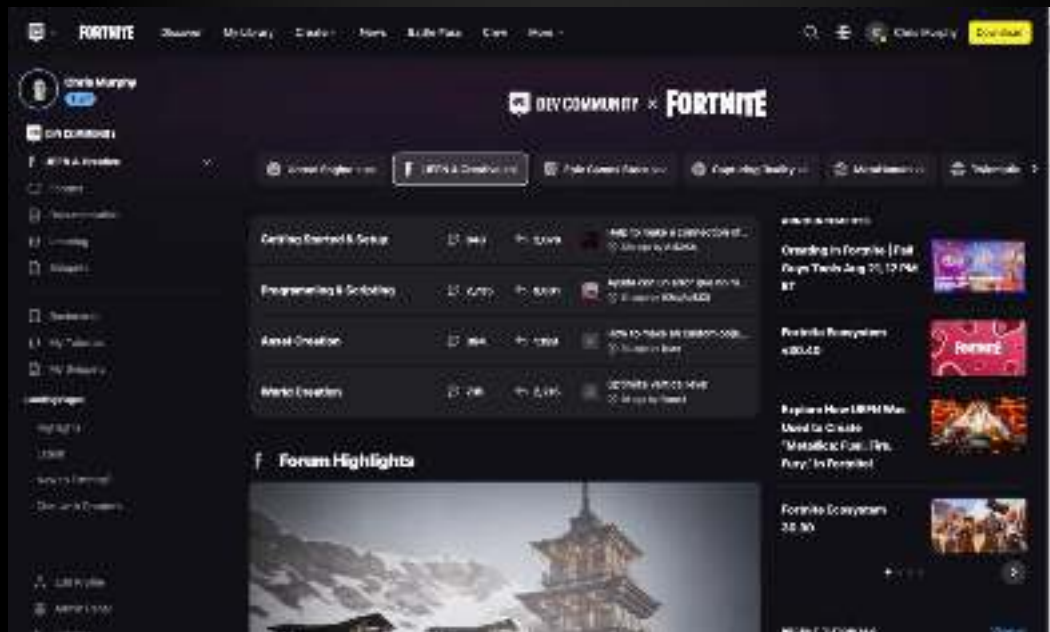
The Epic Developer Community supports both UEFN and Unreal



Verse Resources

While Unreal Engine docs are often more akin to teaching folks how to use different items in the kitchen, UEFN docs are more likely to feature something resembling a recipe.

This means that there are a lot more “How to” guides involving step-by-step processes with the code included. Leverage this when you learn Verse.



Project Templates

Starting a project? Looking to get things done? Tear through these examples.



What are the immediate
wins?

And how does this pair with the workflow you know?

Creative Iteration

Time to PIE is key in large scale projects and UEFN couples the capabilities of Unreal Editor with the free-flow nature of Fortnite Creative.

Once a session is established there's real-time updates between editor changes and the session (and back again!)



Multiplayer out-of-the-box

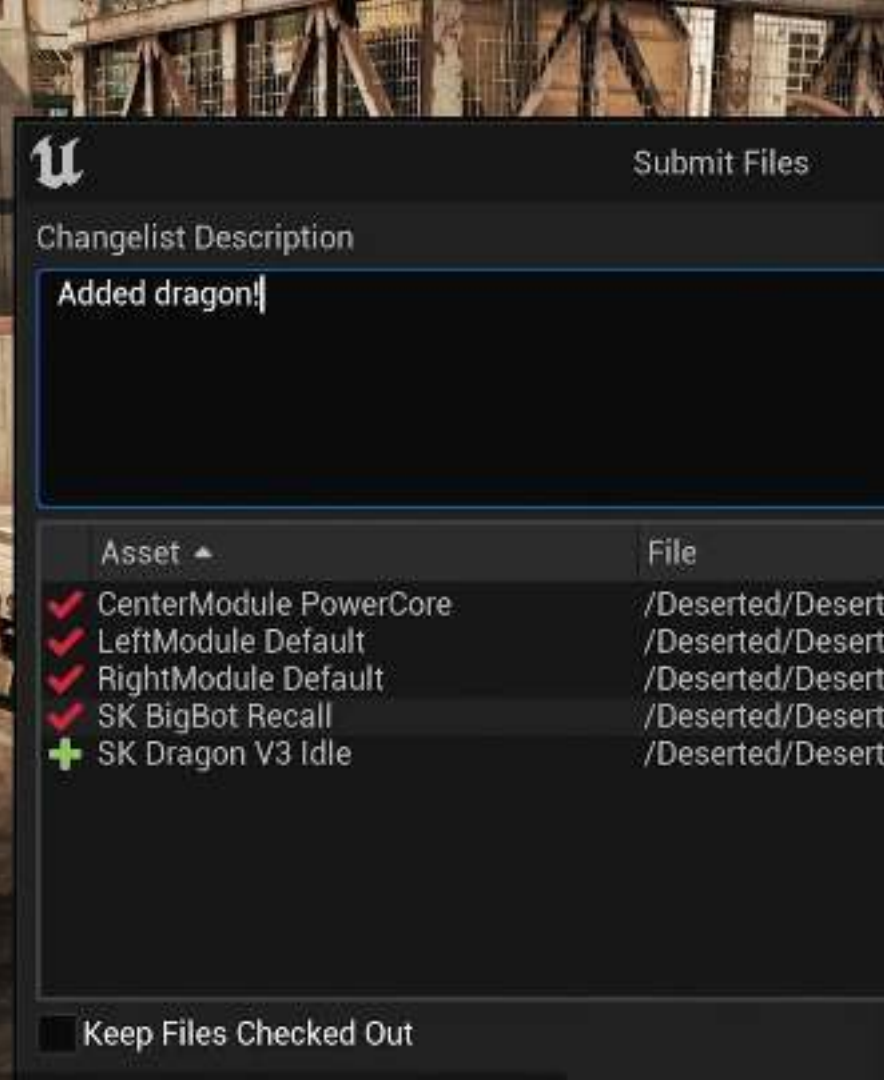
As the project is built inside of Fortnite the multiplayer aspects are there from the very start. Within 'standard' projects Replication isn't generally something developers have to worry about.



Built in Version Control with Unreal Revision Control.

Version Control is built in from the moment you start your project through Unreal Revision Control.

Deep integration through the editor including World Building tools and team functionality.



Unreal

Project Browser



Settings

Messages

Getting Started

Docs

Community

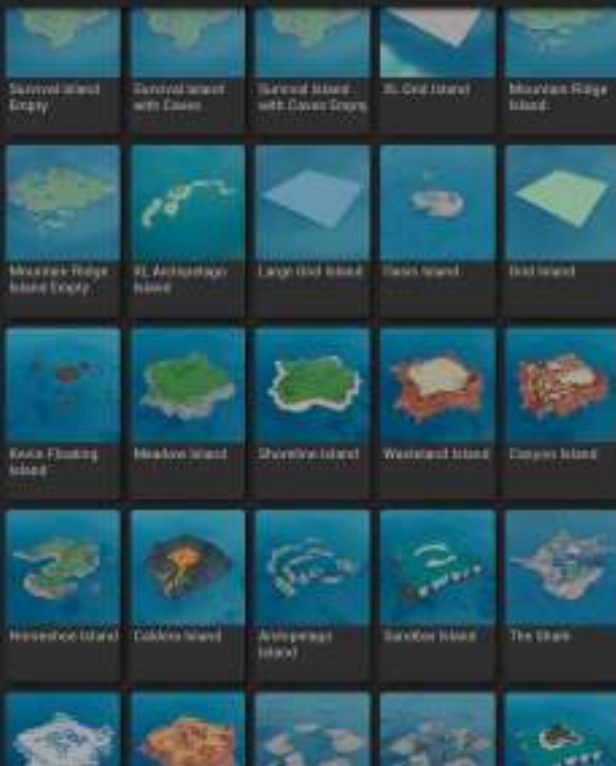
MY PROJECTS

Highly Spammable

ISLAND TEMPLATES

LEGO® ISLANDS

FEATURE EXAMPLES



Fall Guys Starter

Get started with making your ultimate experience featuring the Fall Guys!

[Docs Link](#)

Project Defaults

Unreal Revision Control

Team Selection: No Team (U)

Project Location: C:\Users\shirley.murphy\Documents\Fortnite Projects

Project Name: MyProject

Content Drawer

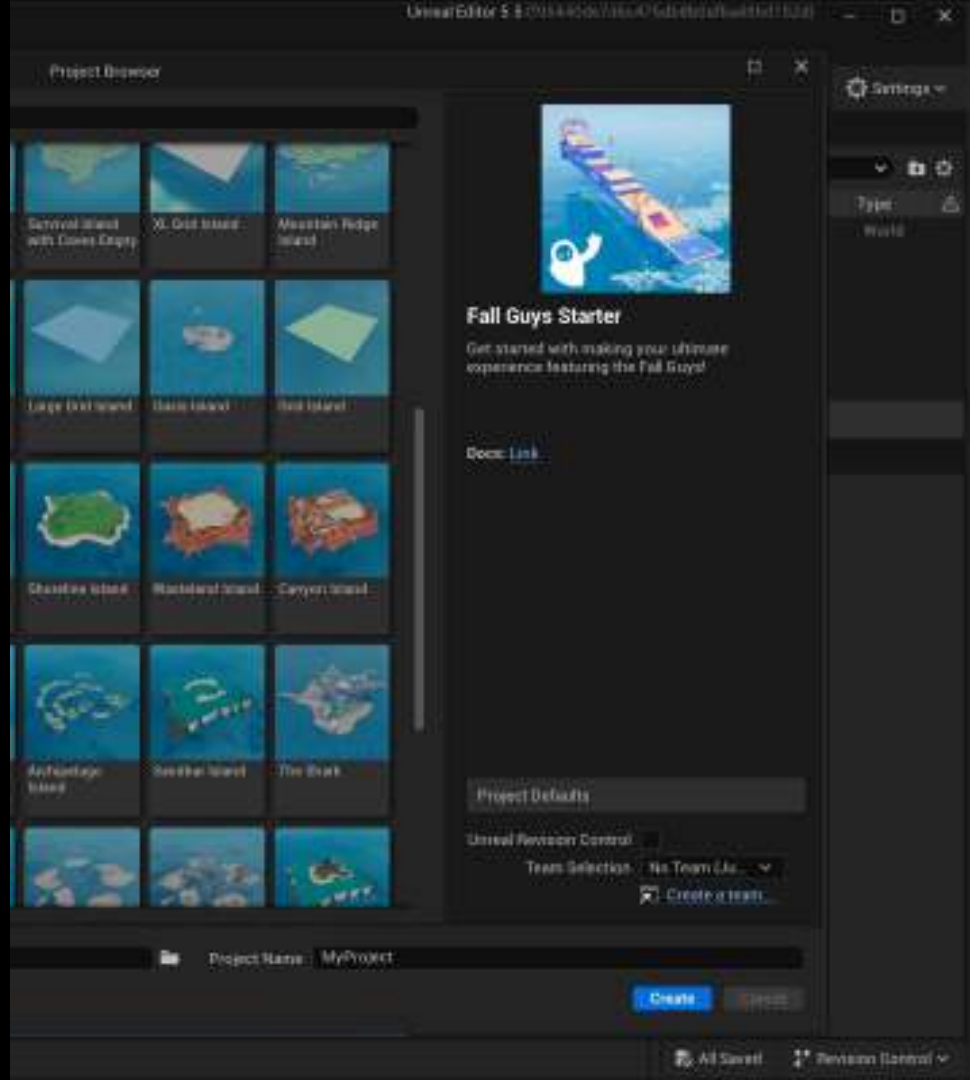
Output Log

All Saved

Revision Control

Built in Team controls

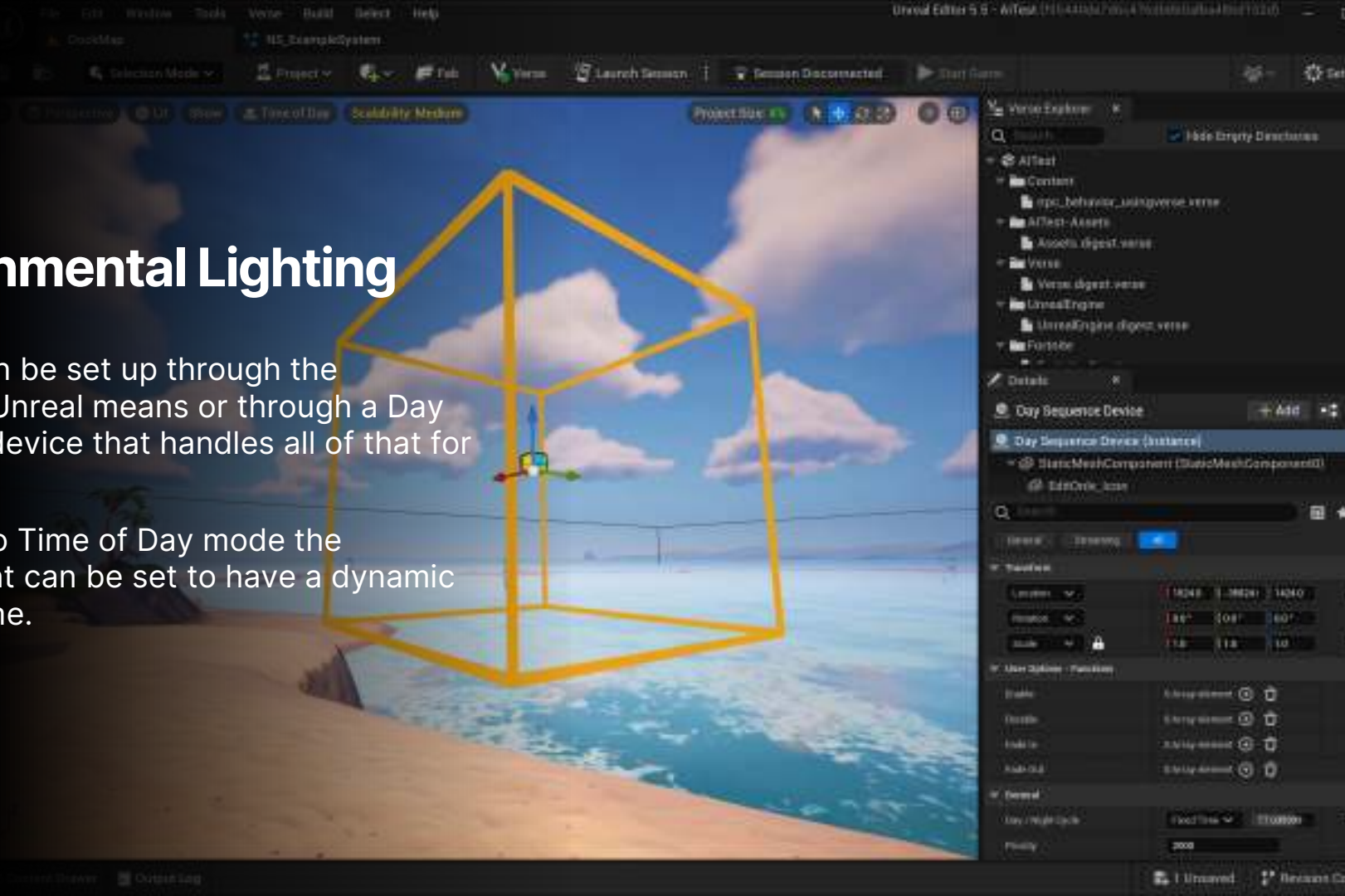
Built in Team functionality that lets you immediately assign other members to your project and control their status as contributors.



Environmental Lighting

Lighting can be set up through the traditional Unreal means or through a Day Sequence device that handles all of that for you.

When set to Time of Day mode the environment can be set to have a dynamic or static time.



What stays the same?

Asset Importing

Supported Imports:

- Static and Skeletal meshes
- Animations
- Textures
- Audio

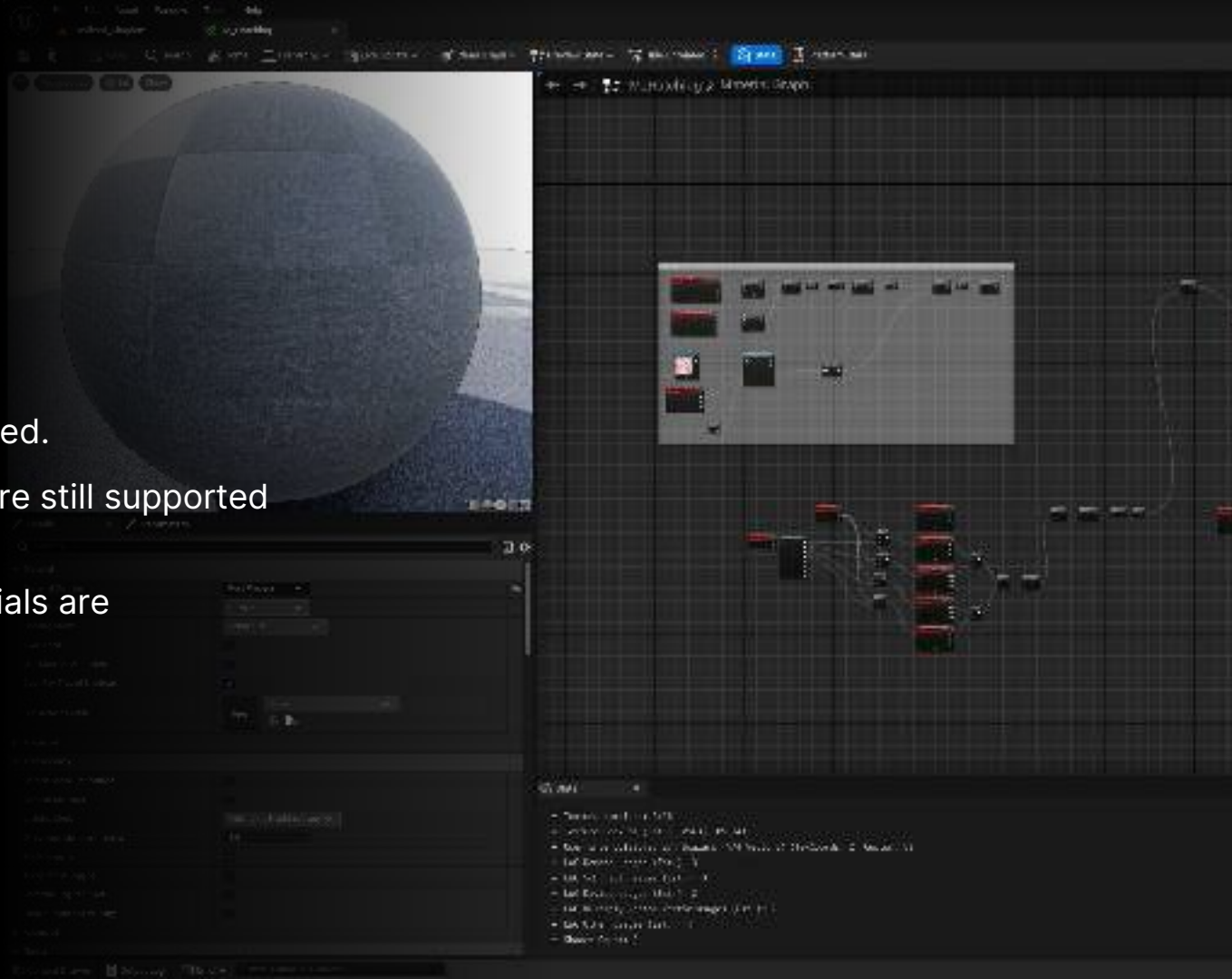


Materials

Material Editor is unchanged.

Most Material Functions are still supported from the engine.

Custom Landscape Materials are supported.



World Building Tools

Traditional approaches for Landscapes, Static Mesh Actors, Lights, Fog, Decals, Water, Foliage and more are supported.

Fortnite Landscape Materials are supported however you cannot access restricted assets, only apply them.



Landscapes

Support Fortnite Landscape Materials by default but developers can implement their own Landscape Materials.

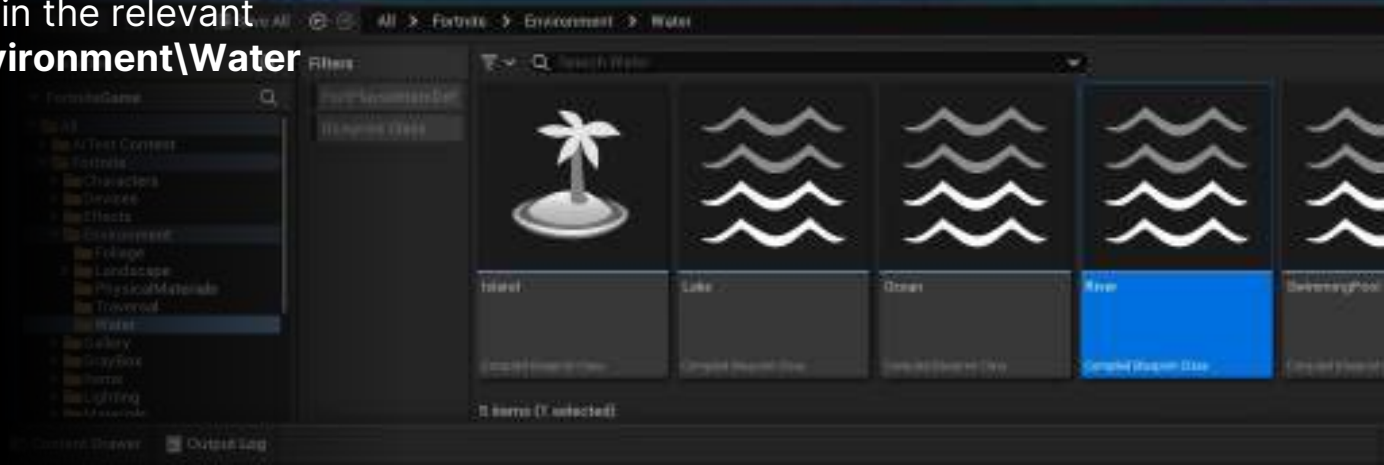
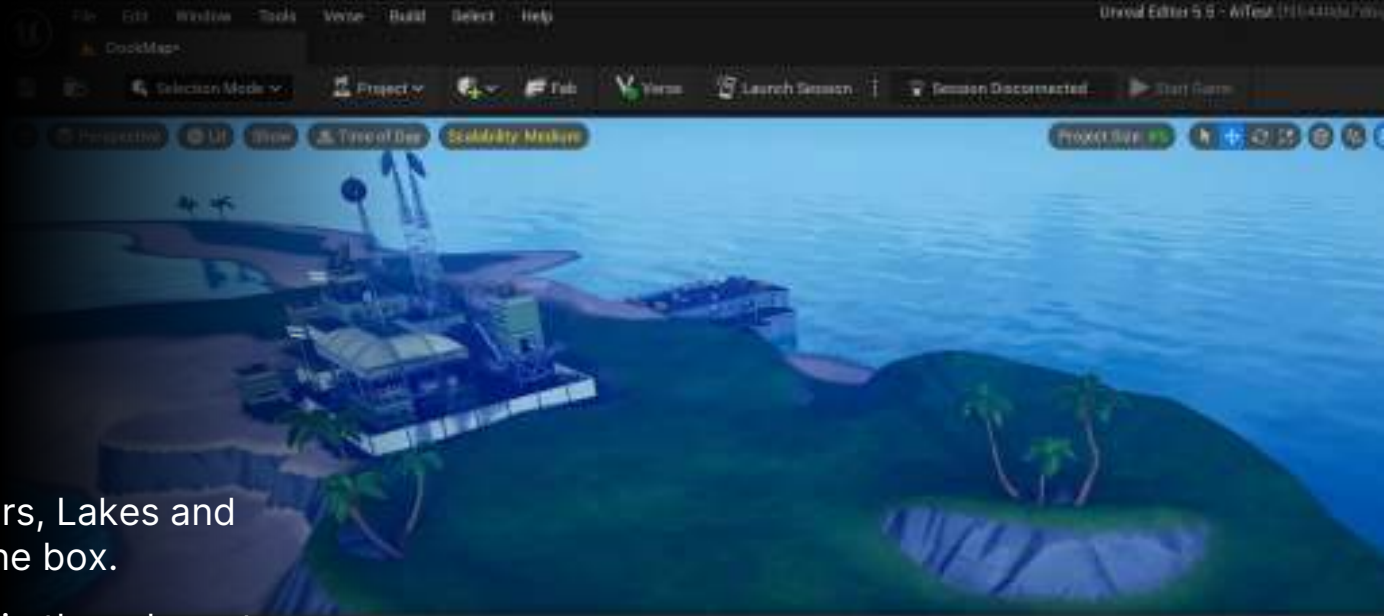
Support for Landscape Splines, Sculpting and Painting.



Water

Support for Oceans, Rivers, Lakes and Swimming Pools out of the box.

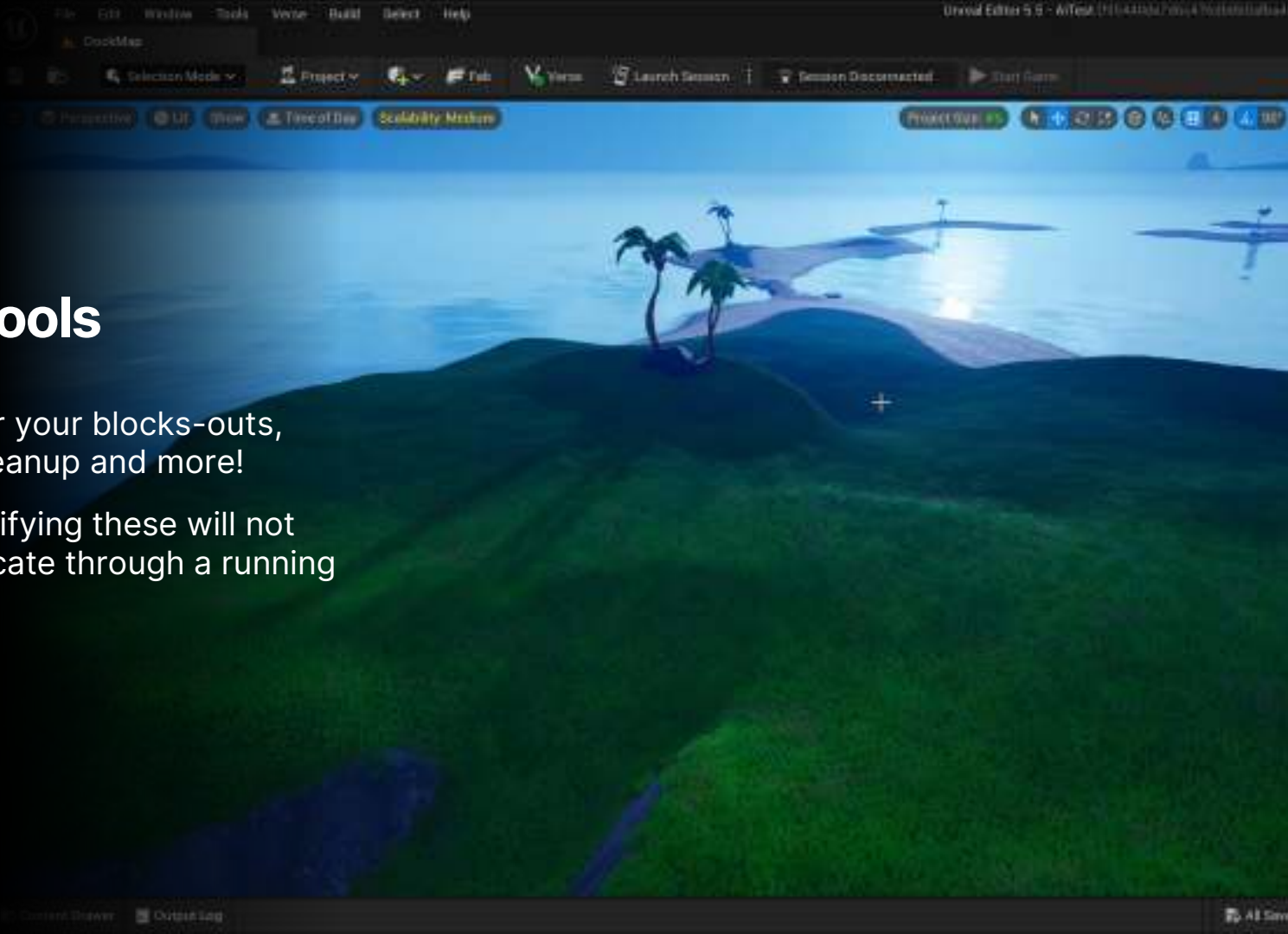
To work with these drag in the relevant Actors from **Fortnite\Environment\Water**



Modeling Tools

Model in engine for your blocks-outs, modeling, asset cleanup and more!

Be aware that modifying these will not automatically replicate through a running session.



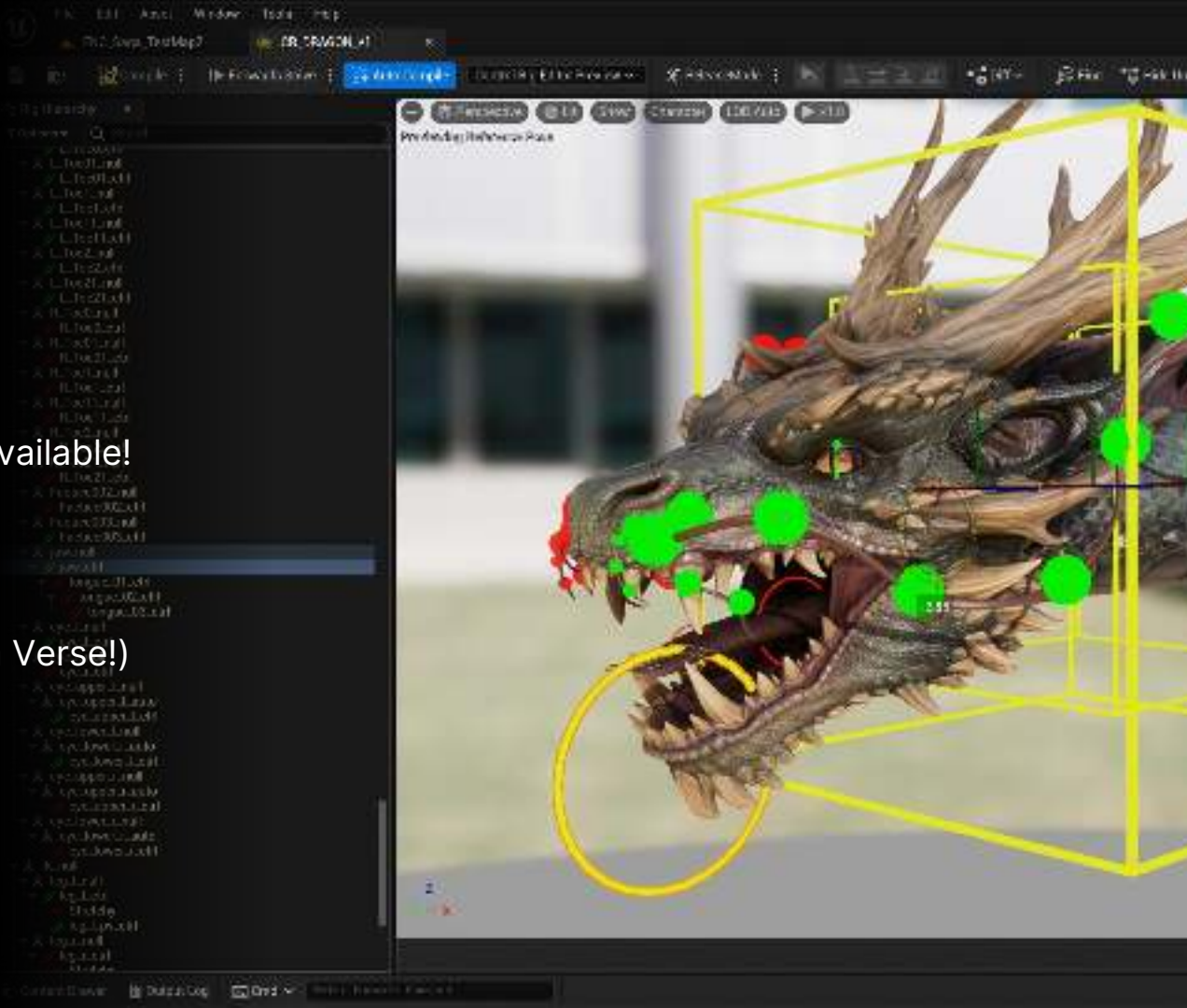
Animation Tools

In-engine animation tools are available!

Custom Animations

Sequencer

Control Rig (can be driven from Verse!)



Sequencer

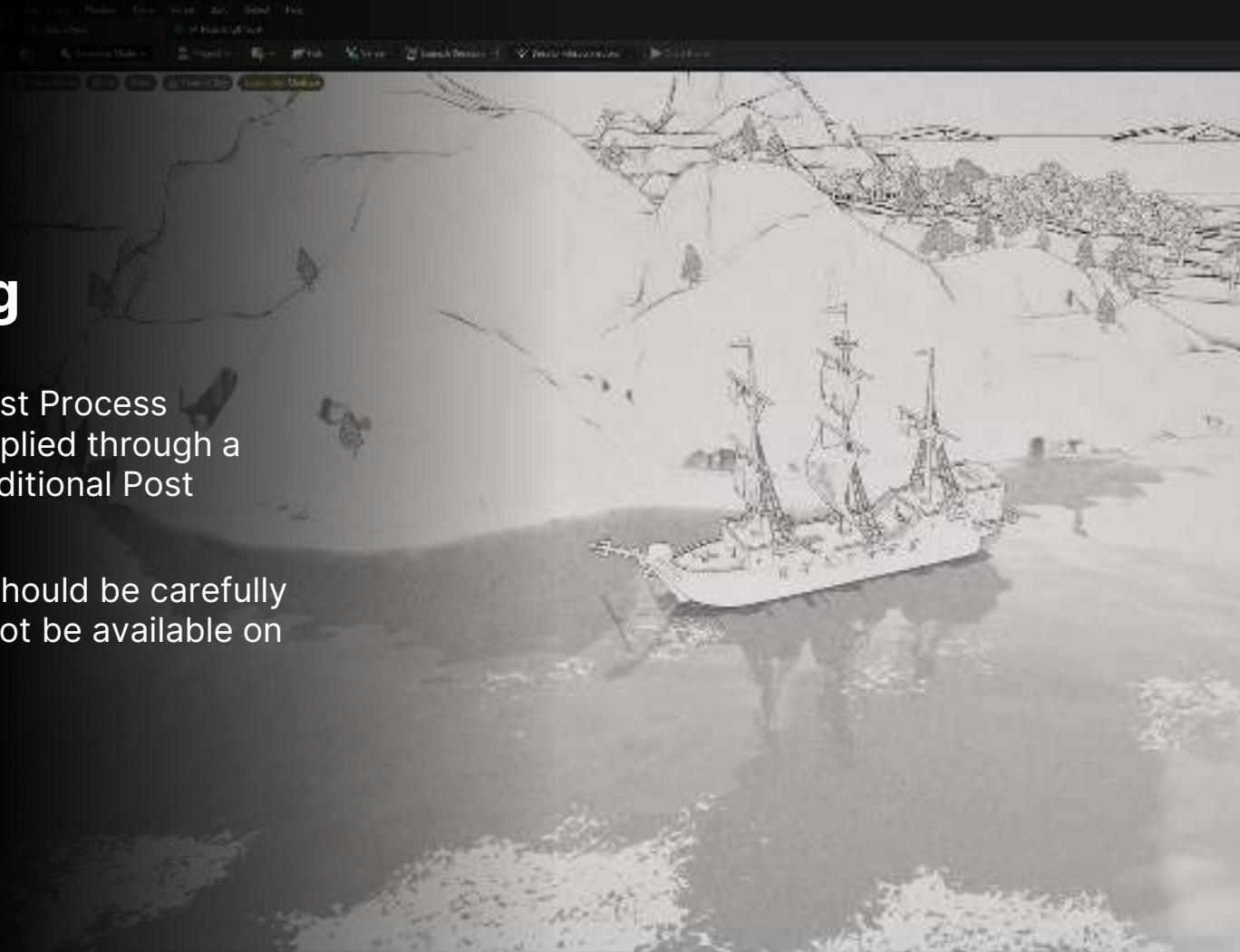
Control environmental effects. Capable of creating both Spawnable and Possessables. Replicates across the network.



Post Processing

Still functional through Post Process Volume actors. Can be applied through a device rather than the traditional Post Process Volume.

Material Post Processes should be carefully considered as they may not be available on Mobile devices.



Asset Migration

The Unreal Engine Migrate tool can work directly into UEFN! As long as the content is supported.

Watch out for content referencing Engine content. UEFN will give warnings but it may still require a little cleanup.



What is familiar but
different?

And how does this pair with the workflow you know?

Cameras and Controls

Controlled through Devices that have a wide range of predefined behaviors and controls. Optionally can be controlled through Verse (check out Talisman!).

Currently support for Side Scrolling and Third Person cameras with First Person cameras coming soon.

When you switch Cameras use the Control device to correct for the new perspective!



UMG

Widgets and Logic have been split so you still have a easy UI for developing your scenes however the logic is driven by Verse.



Triggers

Encapsulated by a more standardized actor for interoperability with Fortnite's feature set.



What is currently out-of-
bounds?

Current Limitations

Override the Player Characters

If they want to be a banana, they can be a banana.

Modify the behavior of weapons or items

Items are currently restricted to the functionality of items within Fortnite

Add custom items

Additional items cannot be added.

Add custom vehicles

The vehicles (and rideable animals) are restricted to the existing Fortnite devices.

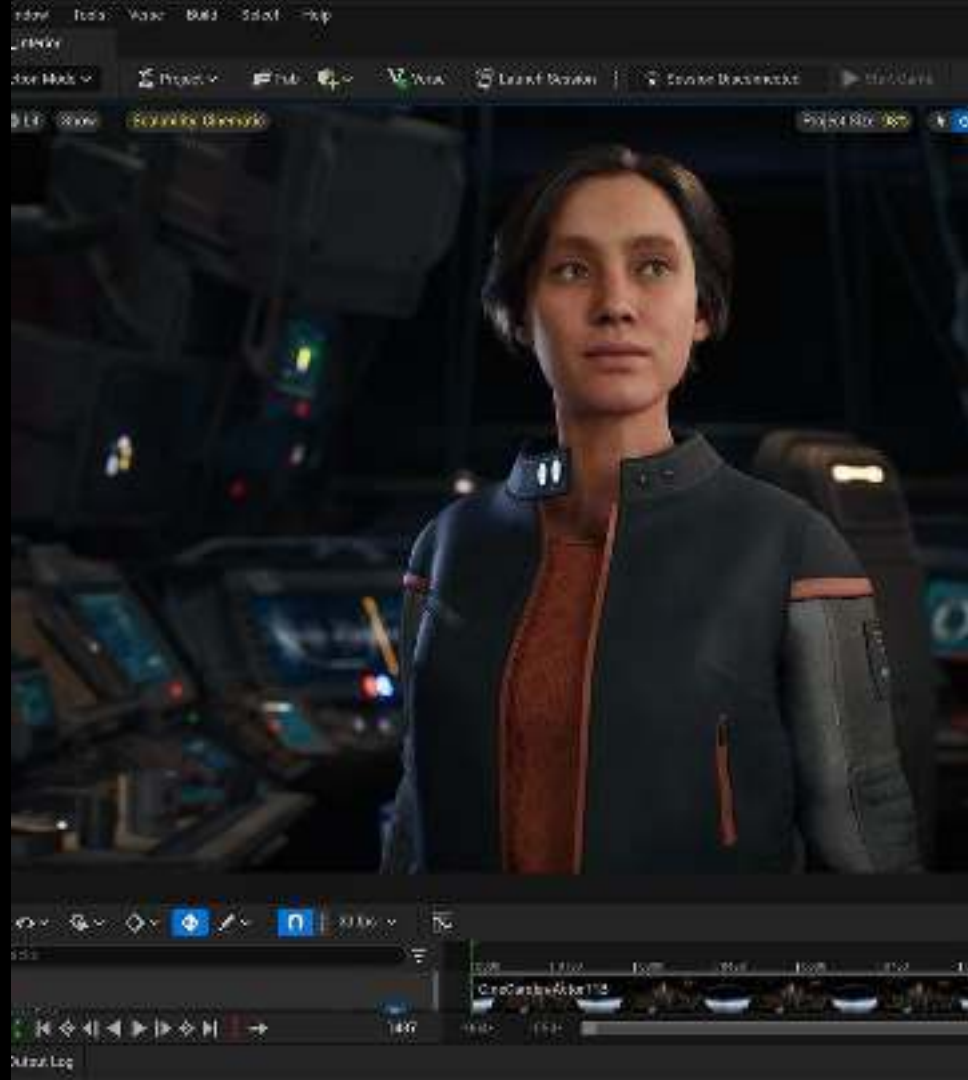
UEFN Roadmap 2024

Stand Up Template		Village Template	First Person Camera Template	Templates
Rocket Racing Templates		Talisman Templates	Physics Template	
		Prefab Template		
		Fall Guys Templates		
		Level Building Templates		
Verse Persistence	Scene Graph V1	UEFN available during downtime	Thin Client	Core Tech
Enabling Jam and Jamming With Patchwork				
LEGO® Templates	Notes in Unreal Revision Control	Day Sequence Device and Time of Day Manager	General Physics	Creation tools
Orbit Camera	Spatial Profiler	Orthographic Camera	Custom Game Items	
Analytics Device		Side Scroller Control Device	First Person Camera	
Custom NPCs		Orbit Camera Improvements	Text Chat	
Post Process Device		Patchwork Song Sync Device	Proximity Chat	
Chair Device		Creator Profile Device		
Input Trigger Device		Stat Creator		
MetaHuman		Shader Complexity View		
Square Tiles	Personalized Discovery	Improved Analytics	Follow-A-Creator	
Q1	Q2	Q3	Q4	

Join the **Creator Feedback Program**

Creators like you will have the opportunity to provide feedback on upcoming features, tools, and updates before they're released to the public.

create.fortnite.com/news/introducing-the-creator-feedback-program





Thank you!