



ПОИГРАТЬ В ИГРУ != ПРОТЕСТИРОВАТЬ ИГРУ



Game QA Manager RT

Level 32

Strength

Dexterity

Constitution

Intelligence

Wisdom ★

Charisma

Initiative

Hit Points

Actions



Astral Knowledge

Cantrips



Githyanki Psionics: M...



Shillelagh



Thorn Whip

Proficiencies

Clubs

Daggers

Алексей Сумкин

Y Далее (выберите эксперта)

L Hide Summary

B Back

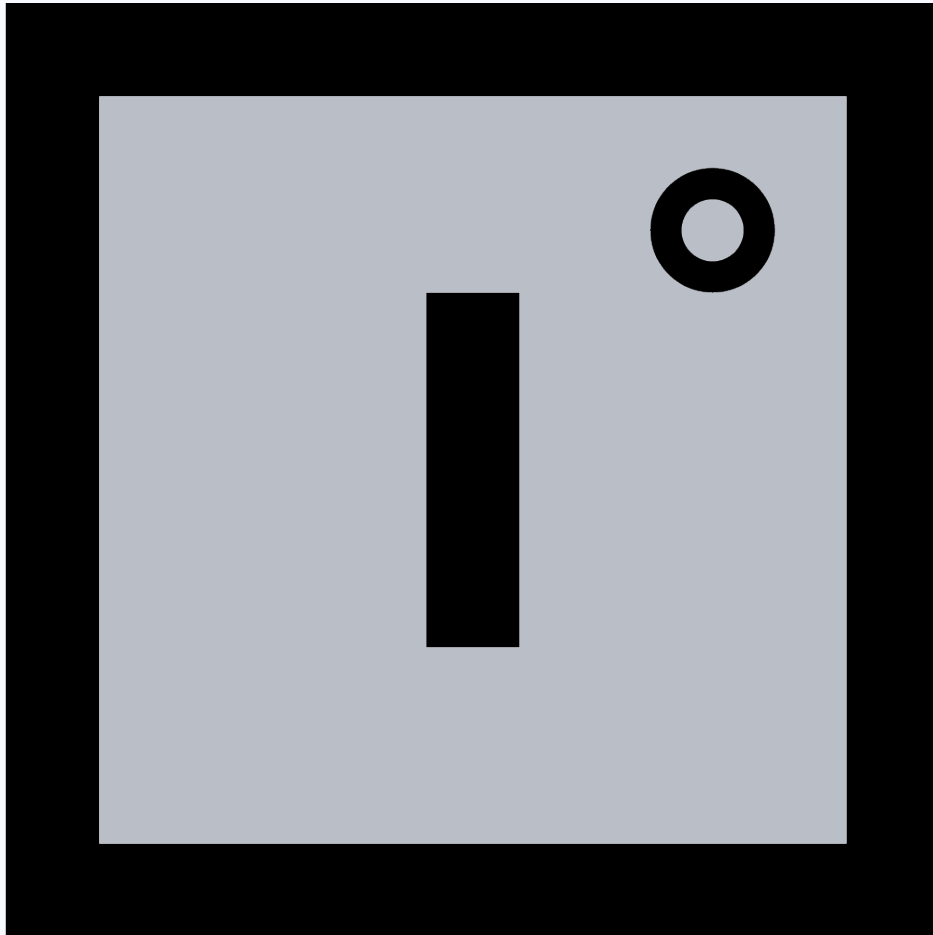
ПОРТФОЛИО



ELECTRONIC ARTS



SQUARE ENIX



IMPROBABLE



QA



@GAMEQACHANNEL

Кто есть Game QA в наши дни

Сделаем свою видеоигру?!

QA - самостоятельная команда?

Выводы и Q&A

План



Кто есть Game QA

Game QA = QA

Game QA в первую очередь QA и должен знать и применять все практики Quality Assurance



Hardcore
GAMER

The logo features the word 'Hardcore' in white, with 'core' in a black box. Below it, '*GAMER*' is written in white on a black background.

Game QA = геймер

Человек без игрового опыта не сможет стать игровым тестировщиком из-за нехватки понимания gamedev домейна



**GameDev - ЭТО КАК
НАПИСАТЬ КНИГУ, СНЯТЬ ФИЛЬМ
И РАЗРАБОТАТЬ ПРИЛОЖЕНИЕ.
ВСЁ ВМЕСТЕ И ПАРАЛЛЕЛЬНО.**



[https://drive.google.com/file/d/1NKZGrkHWQwxpt5_L_LPLMkfm5XhscBrA/view?usp=drive link](https://drive.google.com/file/d/1NKZGrkHWQwxpt5_L_LPLMkfm5XhscBrA/view?usp=drive_link)



ИДЕЯ ИГРЫ (КОНЦЕПТ)

Класс: Паладин Game Designer

Приоритетные характеристики: интеллект, выносливость, дух

АРТЕФАКТЫ РАБОТЫ:

- VISION документы
- GAME DESIGN документы (ГДД)
- Геймплейный сценарий
- Схемы уровней



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DOOM BIBLE

BY TOM HALL

REVISION NUMBER .02

DATE: 11/28/92

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ГДАД

flashlight is turned off then the enemy radius is dramatically reduced and will only attack if the player near enough bumps into the enemy.

Sound – Enemies can also base attacks from the sounds they hear. The sound of footsteps and the radio which James carries, act as a beacon for enemies. In turn the enemies will advance to the source of the noise and attack James. Enemies will not hear the footsteps of James while walking.

The only time these two rules do not apply to the enemies AI is if there is a specific “set piece”, in which the enemy is scripted to act in a certain way.

PLAYER CONTROLS



- Analogue stick = Move
- Analogue stick + Square = Run
- L1/R1 = Side Step
- L1+R1 = Turn 180 degrees
- L2 = Centre camera
- R2 = Ready attack
- R3 = Fully restore health
- Select = Pause
- Start = Open inventory

- Triangle = Call map / Hide Map / Hide inventory
- Square = Run / Hide Map / Hide inventory
- Circle = Flashlight on/off / Hide Map/ Hide inventory
- Cross = Confirm action / Examine / Take or use items/ Hold R2 simultaneously to perform an attack. (Press Cross = Light attack, Hold Cross = Heavy attack)
- L1+R1+Start+Select = Soft Reset

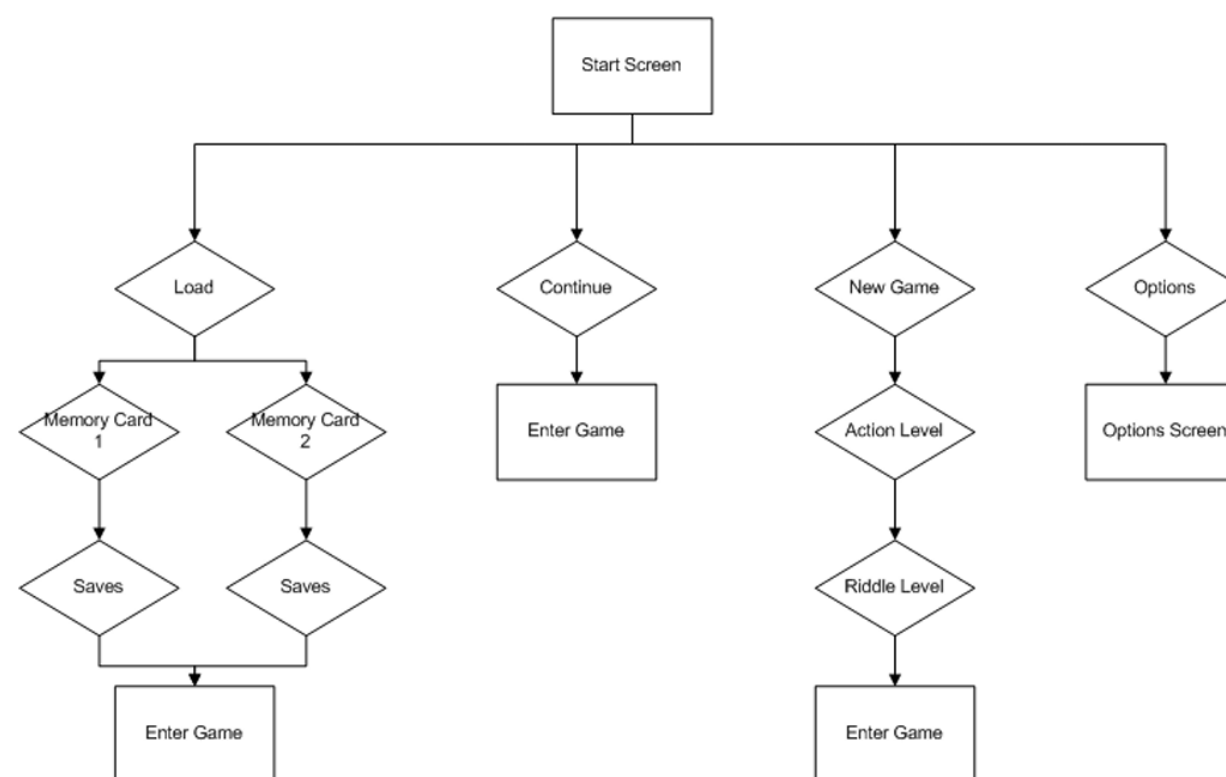


INTERFACE

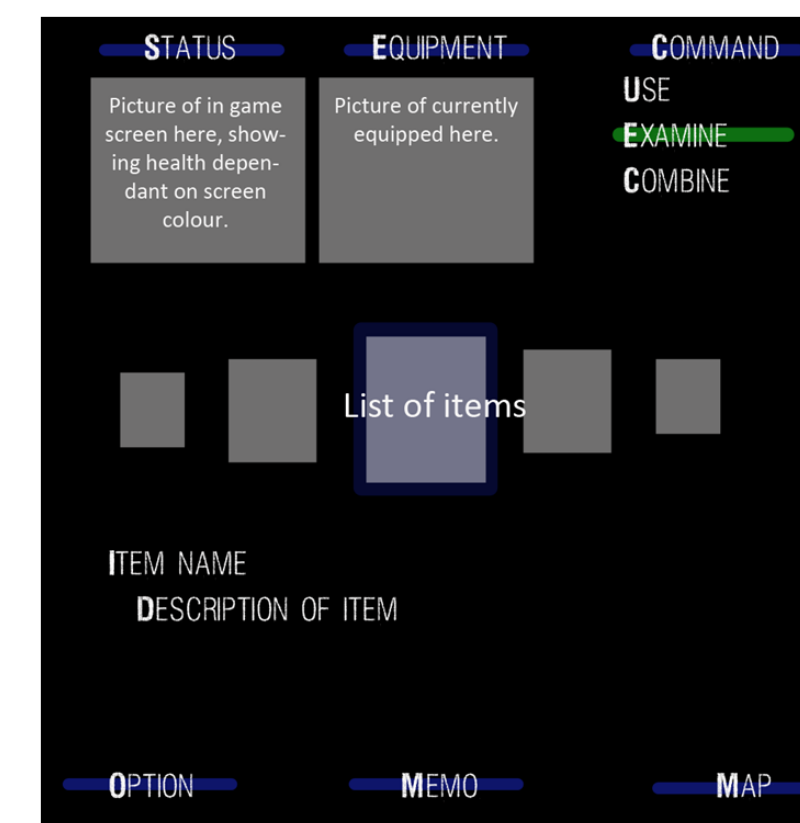
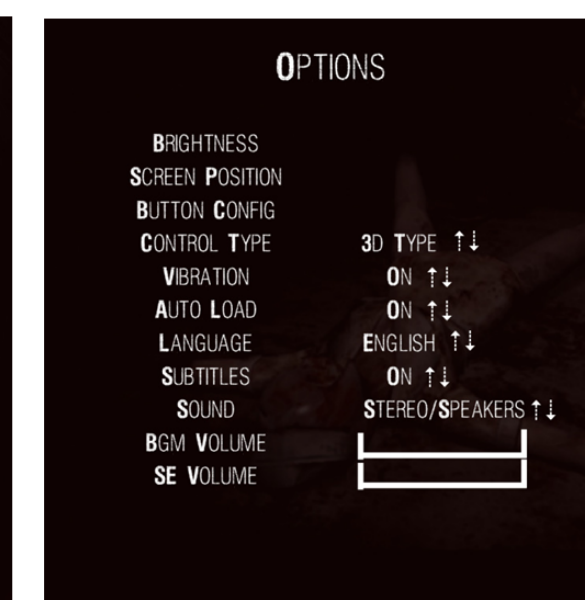
FLOWCHARTS

The following are flow charts for the different screens and their individual data flow. The save screen and load screen are shared so it is only included once in the start screen flow chart.

Start Screen Flow Chart



MOCK UP SCREENS



7.3.3 DOOM SOUNDS: EPISODE ONE

This section lists all the digitized sounds. They are categorized by Download, Vital, and Non-Vital.

- V Knife Swipe
- V Knife Hit
- V Pistol Shot
- V Shotgun blast
- V Automatic Machine Gun burp
- V Missile Launch
- V Bullet Hits Wall
- V Bullet Hits Metal
- V Bullet Hits Glass?
- V Item blows up
- V Shot hits monster
- V Door open
- V Door close
- V Elevator at floor
- V Switch flip
- V Walking on gravel
- V Maybe walking and running (would add a lot of realism to feel)
- V Player hit
- V Player hits wall
- V Player hits floor
- V Rollee™ Chair rolling
- V Rollee™ Chair hitting something
- V Warning klaxon
- V Demon roars (maybe animal roars backwards or overlaid)
- V Big demon hooves walking
- V Demon dies
- V Guy dies
- V Big ceiling-extrusion press slamming down
- V Electric spark zapping
- V Sound of Buddy being ripped in two
- V Elevator hum
- V Elevator platform moving
- D Waste plant arm sweeping

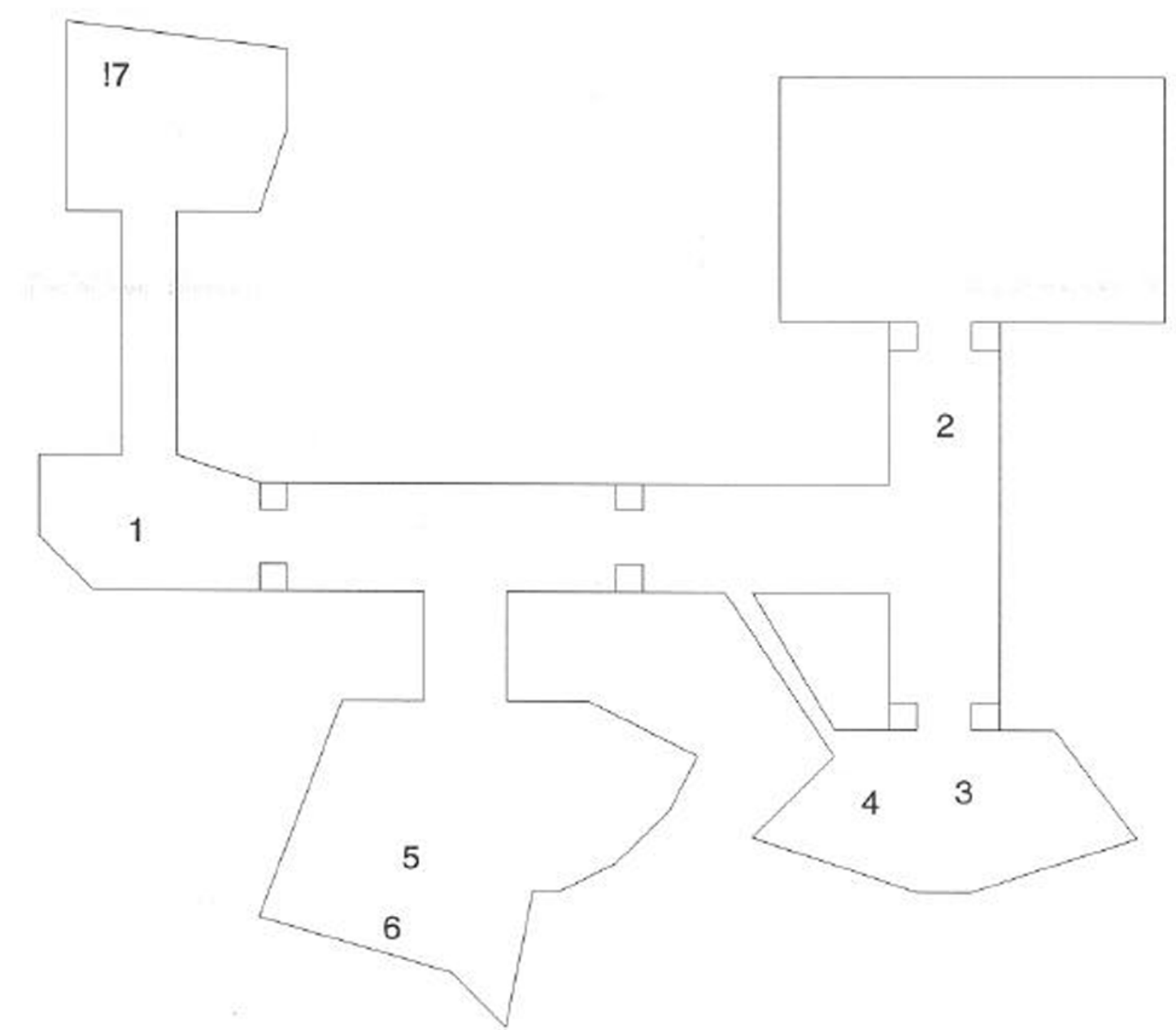
Speech (we should get the NeXT lady for these)

- V Panel, Bad Hand: "Access Denied-Officers and Essential Personnel Only"

7.4 MAPS

Here are the episode one maps.

Level One: Secondary Hangar



- !7 Start of Level
- 1 Dehuman
- 2 Dehuman
- 3 Demon troop
- 4 Switch
- 5 Demon troop
- 6 Shotgun

C4. OTHER COMMAND LINE UTILITIES

SpitWad

Spits out information contained in a wad to text screen. (Pipeable, of course.) It also details wasted space from partial relinks.

```
spitwad wadfile[.WAD] [startlurap# endlurpn#]
```

All the lumps in the WAD will be listed. You may specify start and end lump numbers.

If there's a need, SpitWad might have the added feature of extracting lumps—but there's not one now.

ViewDo

Takes the Doom viewscreen and finds the exact boundaries. With this info, it sets up data for the program so it will draw within the window.

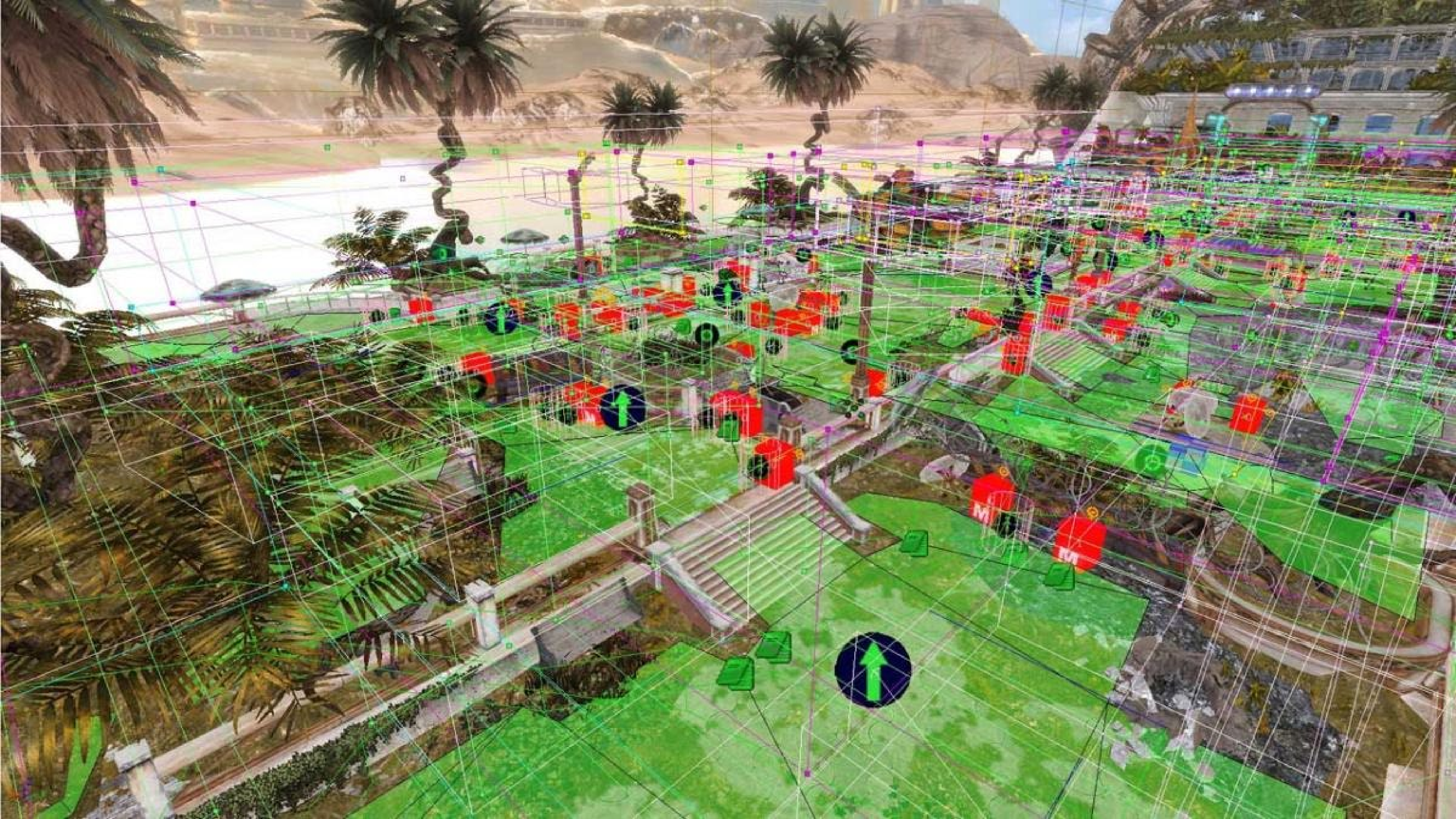
```
viewdo [screenname[.LBM]]
```

If no screen name is specified, it defaults to "PLAYSCRN.LBM".

Outputs "VIEWINFO.LMP", which contains screen boundary information.

Names for a utility john never wrote: Checurve, RuleView, Rattera, CurveCop, Anglathe, OhTopos, SeeSlope, Scangle, Scanc (scan contour), Testcurv, Contrace, Slopeded, Curvalid, Polisher, Lathe, Sculptor, Slopeval, Topolish.





Как QA помогают GD



Понимание “что есть ваша игра”, какие от неё должны быть ощущения, нефункциональное тестирование документации (ГДД).



Работа со сценарием и его нефункциональное тестирование. Проверка диалогов и их связность с повествованием. Работа с геймплейными и стелс схемами



Проверка баланса игры, обратная связь по «необходимости» игровых механик при разном балансе



Тестирование инструментария для ГД, проверка реализованных ГД механик, квестов, игровой логики

Класс: Рыцарь Смерти Game Developers

Приоритетные характеристики:
интеллект, резистентность к хотелкам ГД

АРТЕФАКТЫ РАБОТЫ:

- TECH DESIGN документы (ТДД)
- Готовые механики
- UI/HUD



Technical Design Document

Section 1 – List of Features Captured from GDD

1.1 List of Features Based on the Game Design Document:

- Third person
- Game world, including
 - 3D objects
 - Characters
 - Weapons
 - Buildings with walls, corridors, doors, stairs, rooms
- Windows platform deployed
- Background story
- Opening scene
- Different levels:
 - Varying difficulty
 - Varying challenge
 - New levels introduce new weapons
- Multiplayer
- Different destructible weapons
- Audio and sound effects
- Variety of enemies (two types of zombies)
- Realistic AI of zombies
- Scoring system
- Comprehensive/informative HUD
- Menus
- Lighting effects
- Interactive objects
 - Staff ID cards
 - Vending machines

Section 2 – Choice of Game Engine

The game engine that has been chosen is Unreal Development Kit (UDK). UDK is a development tool set, which implements the Unreal engine for the users to edit and manipulate. Some of the features that UDK possesses are:

- Animation
- AI
- Audio system
- Editing of the game environment
- Kismet (visual scripting system)
- Physics support with physics assets

4.3 Design Diagram:

- The design diagram displays the design team involved in the game, and is shown in Figure 4

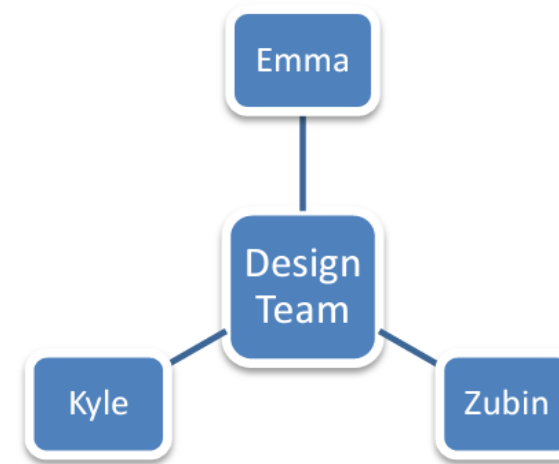


Figure 4 Design Team Diagram

4.4 Implementation Diagram:

- The implementation diagram illustrates the flow of the different stages of the creation of the game
- It also includes what weeks each stage will take place at
- This diagram is displayed in Figure 5

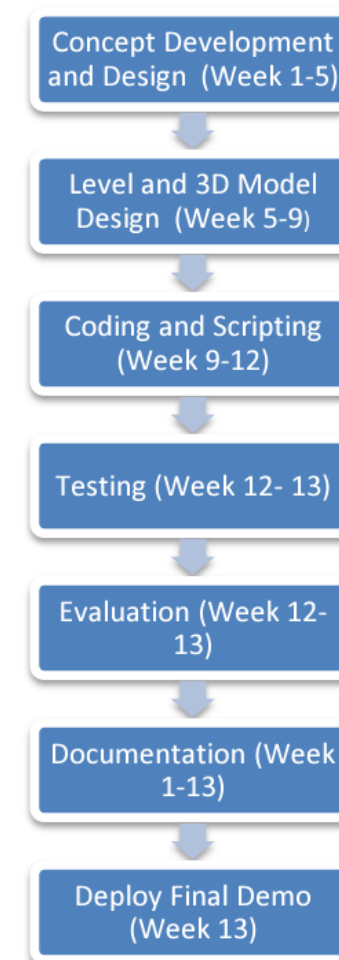


Figure 5 Implementation Diagram

ТДДД

Components

+ Add Search

FIRE_Ctrl (Self)

Transform Component (TransformComponent0) Edit i

My Blueprint

+ Add Search

GRAPHS

- Event BeginPlay
- Event Tick

FUNCTIONS (20 OVERRIDABLE)

- ConstructionScript

MACROS

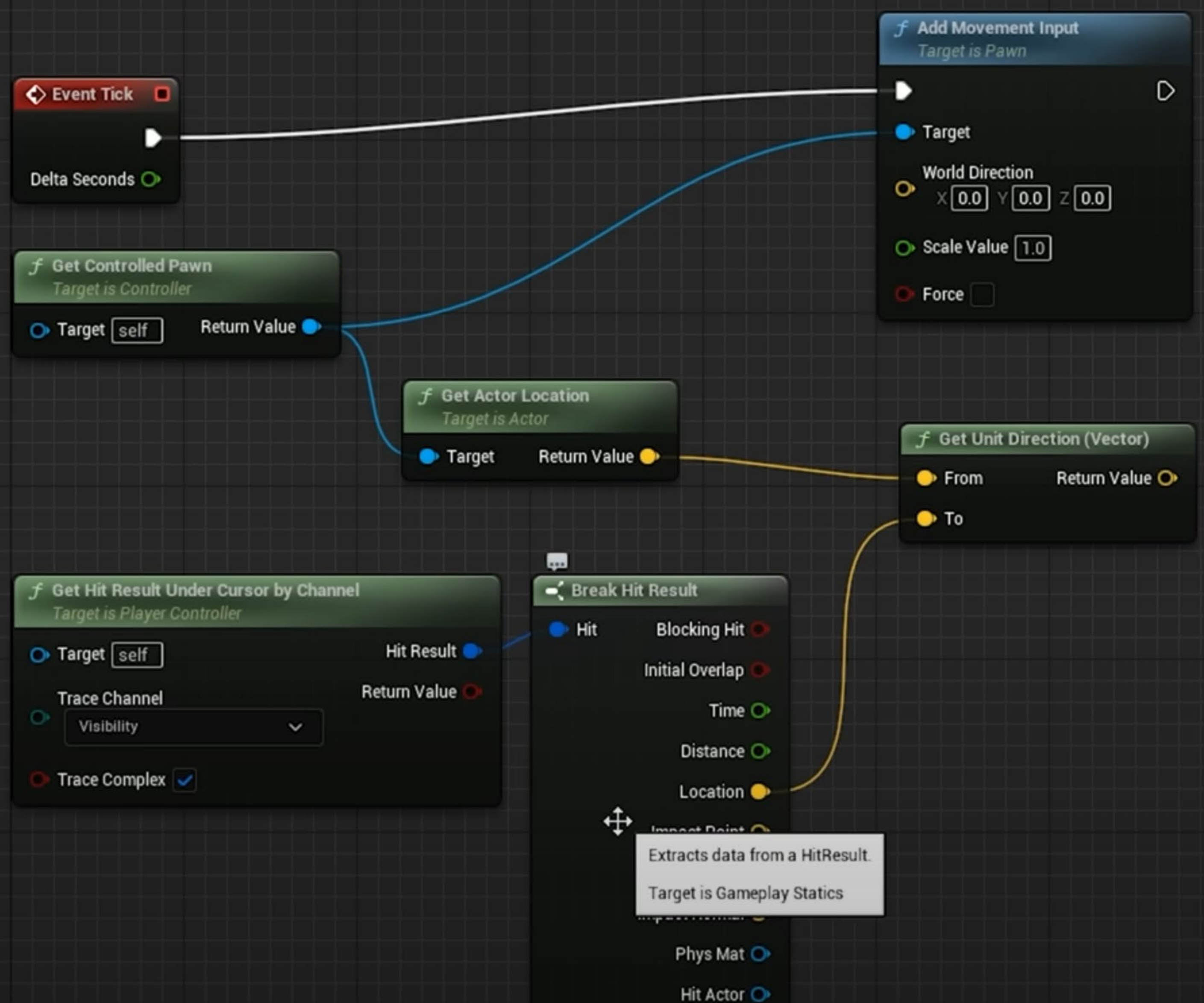
VARIABLES

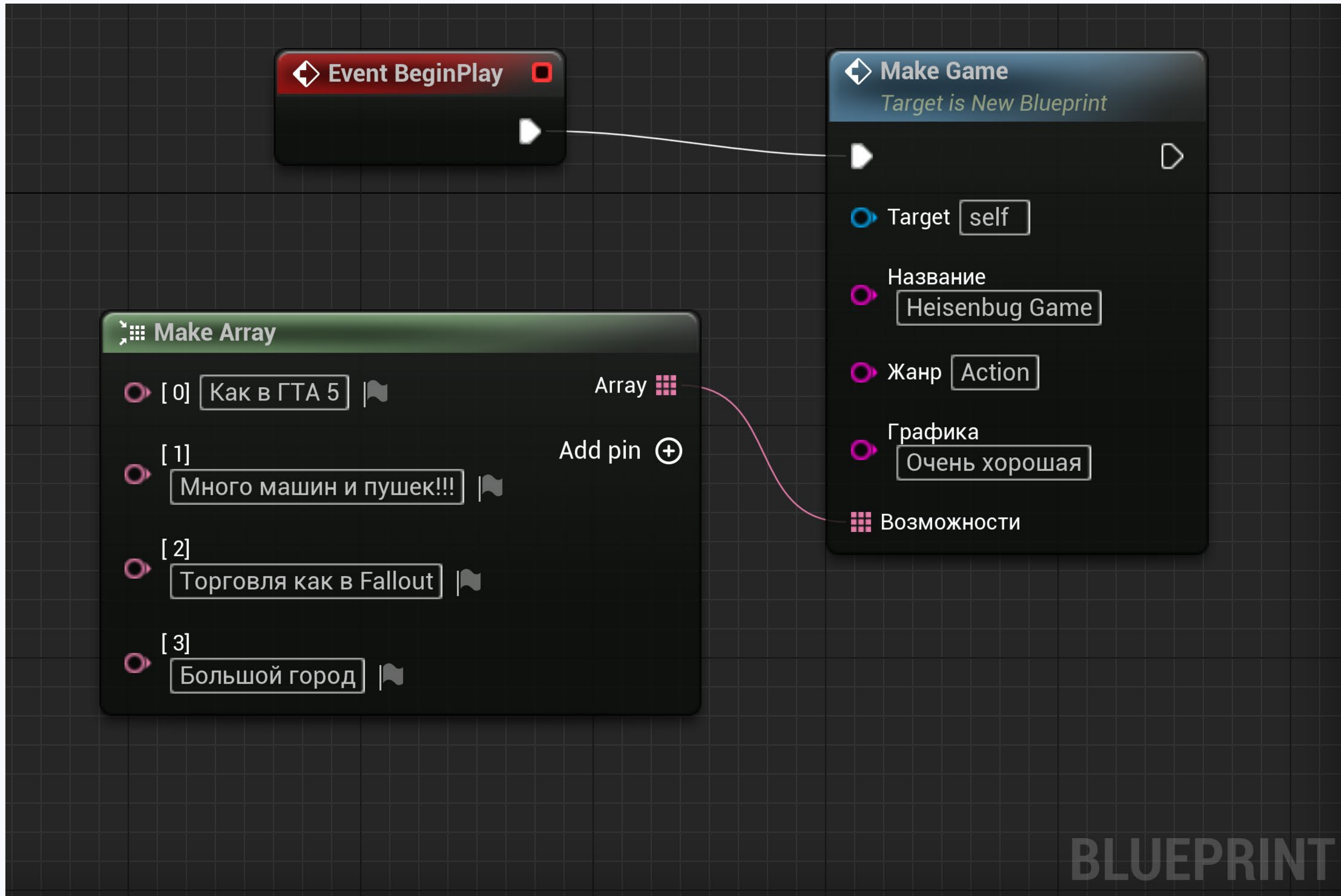
EVENT DISPATCHERS

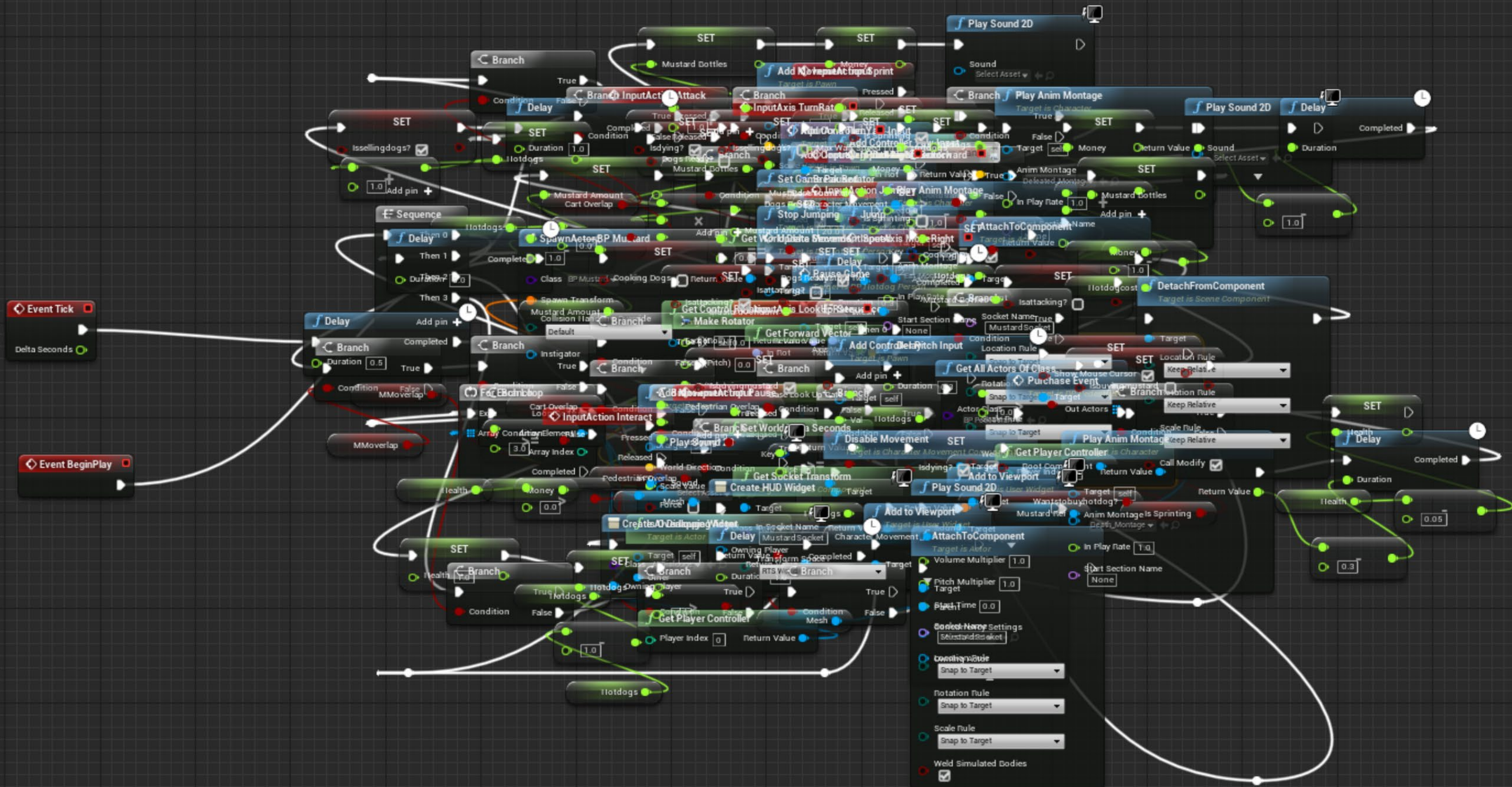
Viewport

Construction Scr... Event Graph

FIRE_Ctrl > Event Graph







Console Commands

FPS

Unit

Stat Game

Stream PS 0

Show Collision

Show NavMesh

DebugBasicHUD

Ability System

Audio DebugInfo

SwitchShowCombo

Quest System

Reset

Immortality_Hits

Immortality_NoHits

Cheat Codes

Как QA помогают DEV



Проверка созданного программистами инструментария для ГД команды



Работа с ТДД, сверка ТДД с ГДД. Анализ инструментария ГД для новых фич



Функциональное тестирование фич и написание/обновление тест кейсов



Проверка UI и HUD на соответствие ГДД и дизайнам фичи

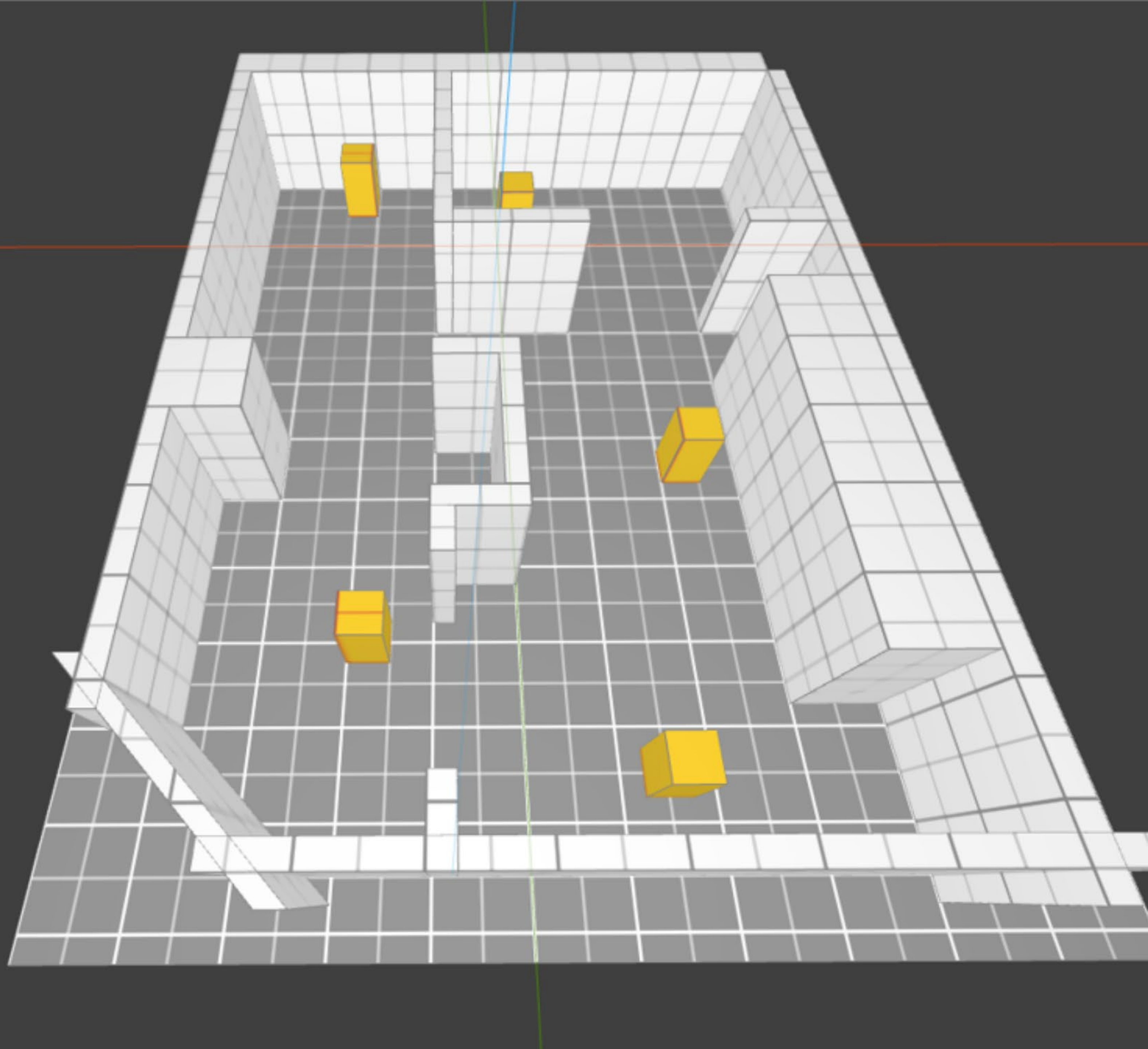
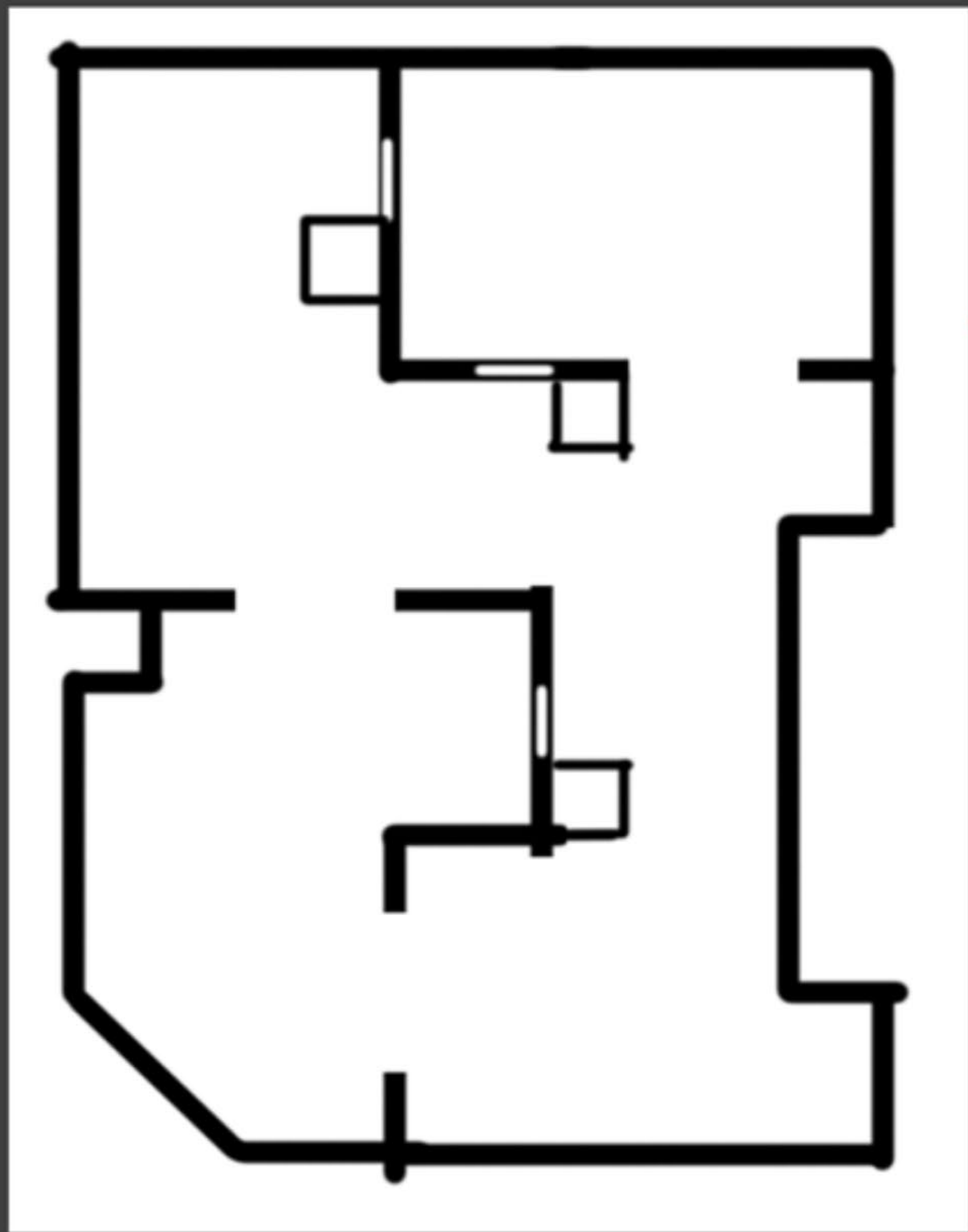
Класс: Кузнец Level Designers

Приоритетные характеристики:
расчётливость, чувство прекрасного

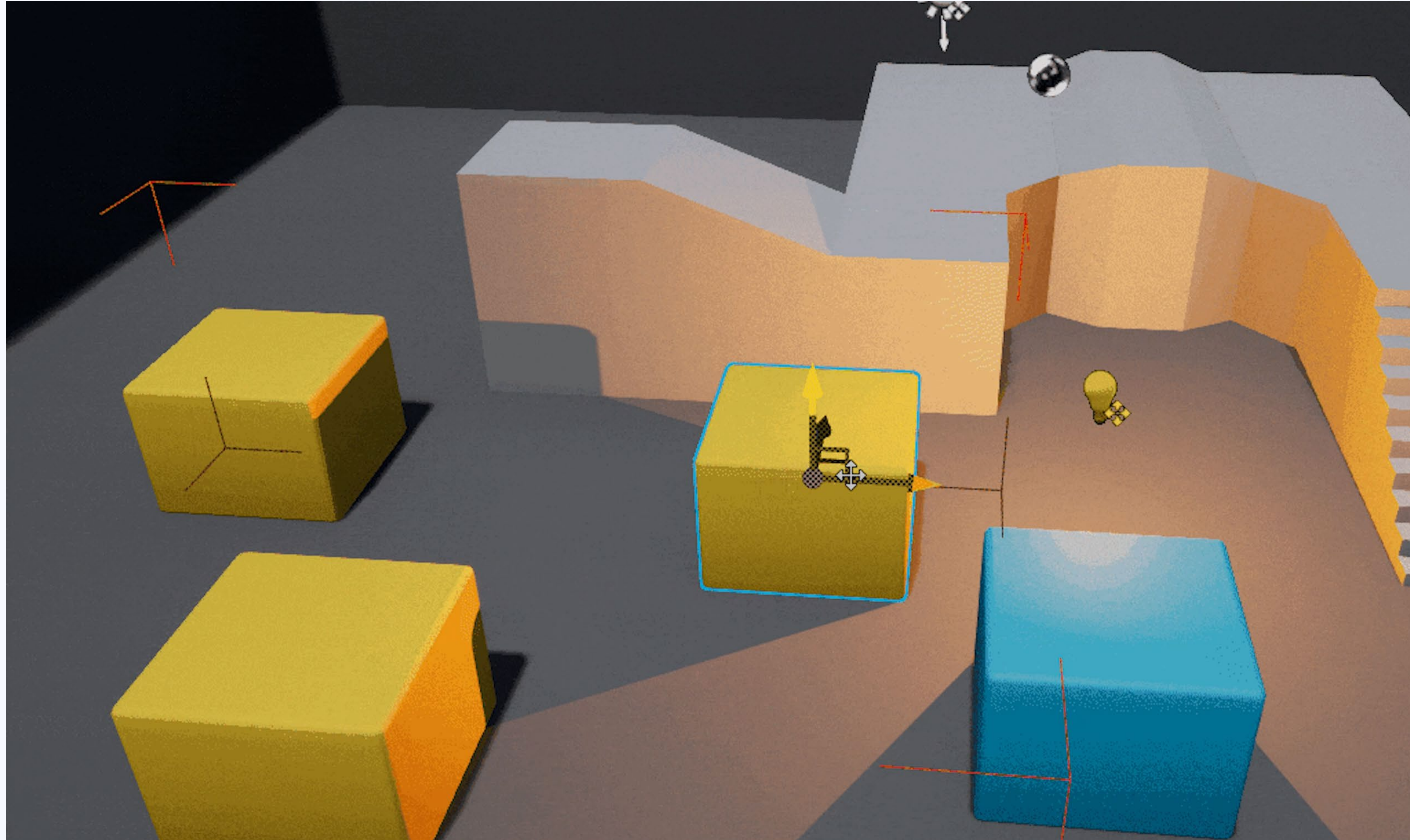
АРТЕФАКТЫ РАБОТЫ:

- BLOCKOUT уровни
- Финальные АРТовые уровни

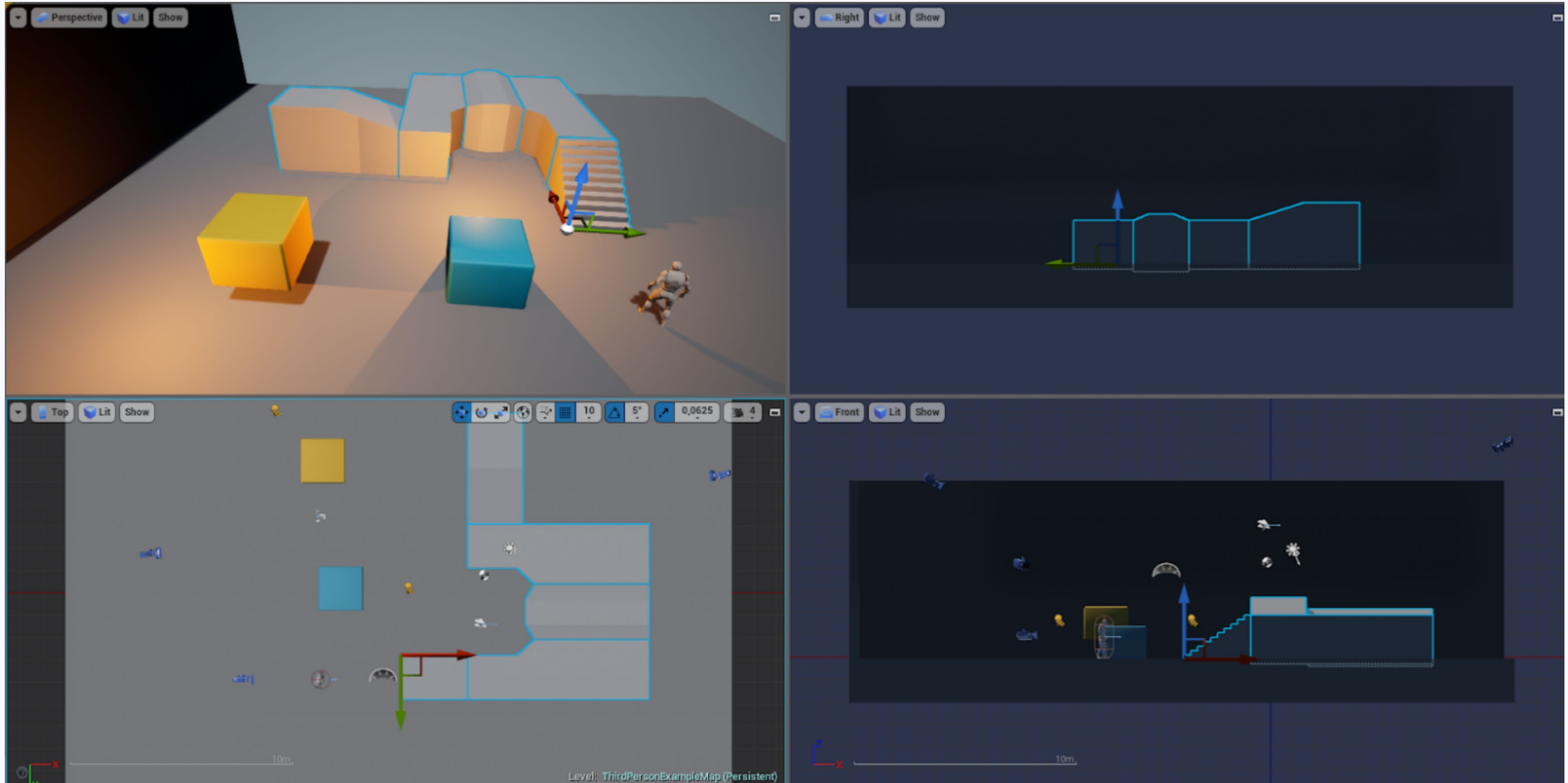




Blockout



https://drive.google.com/file/d/1grFgMFAgXJnnv1_cpPhc9MH_2Adlakm9/view?usp=drive_link

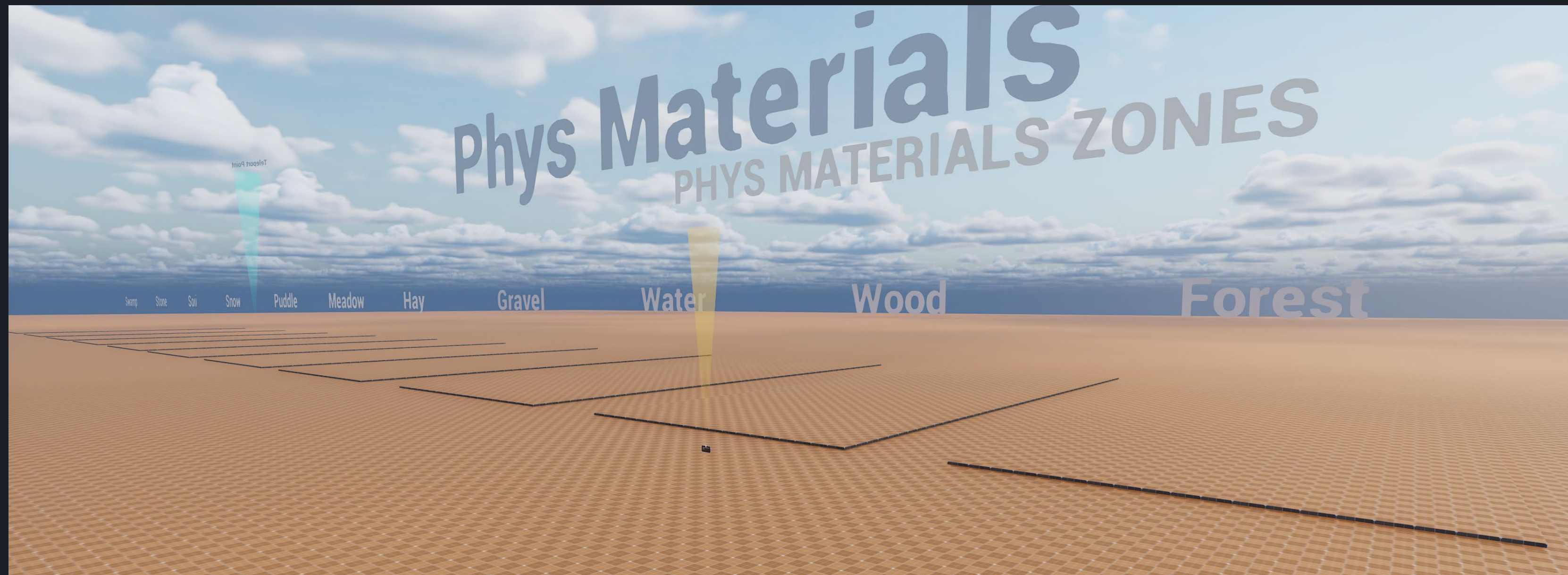
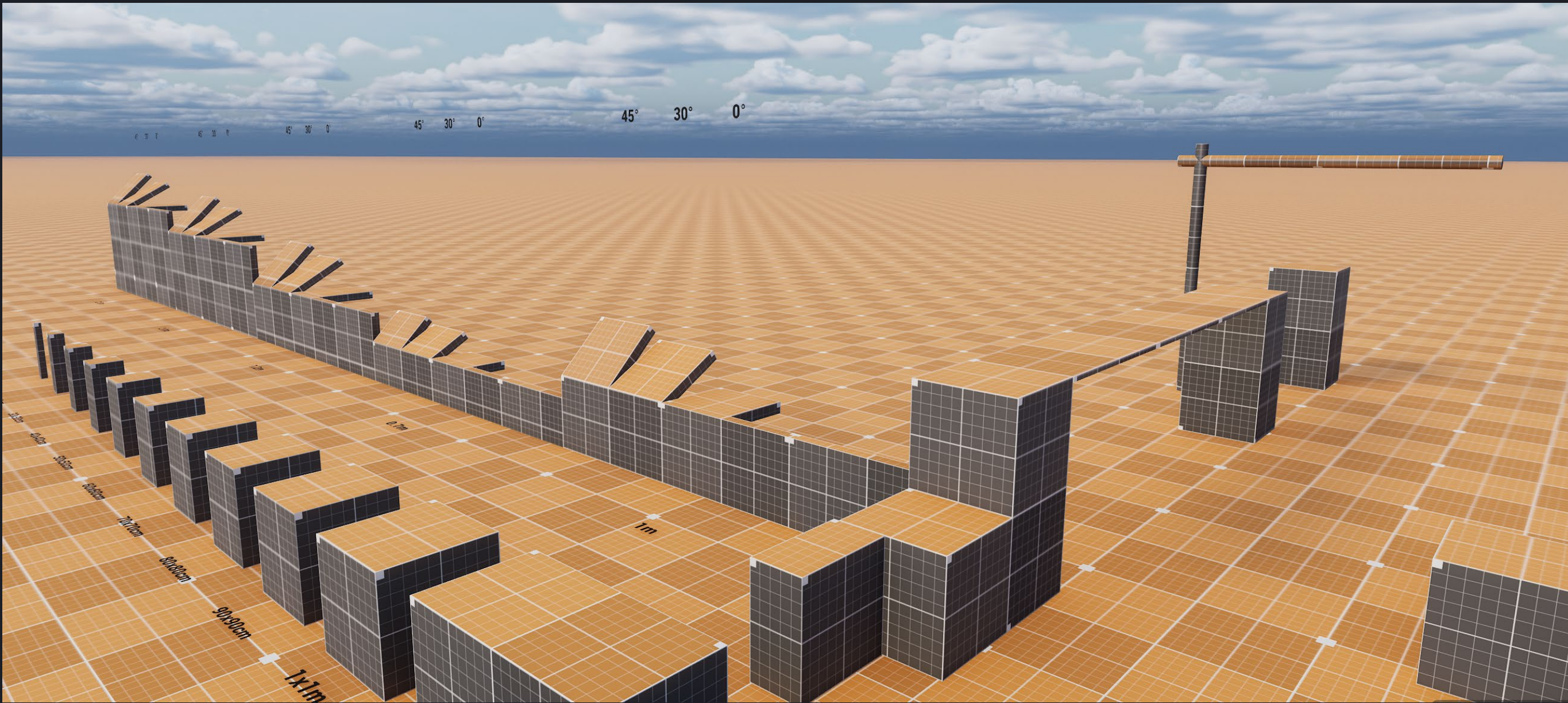


Пример Blockout из Uncharted

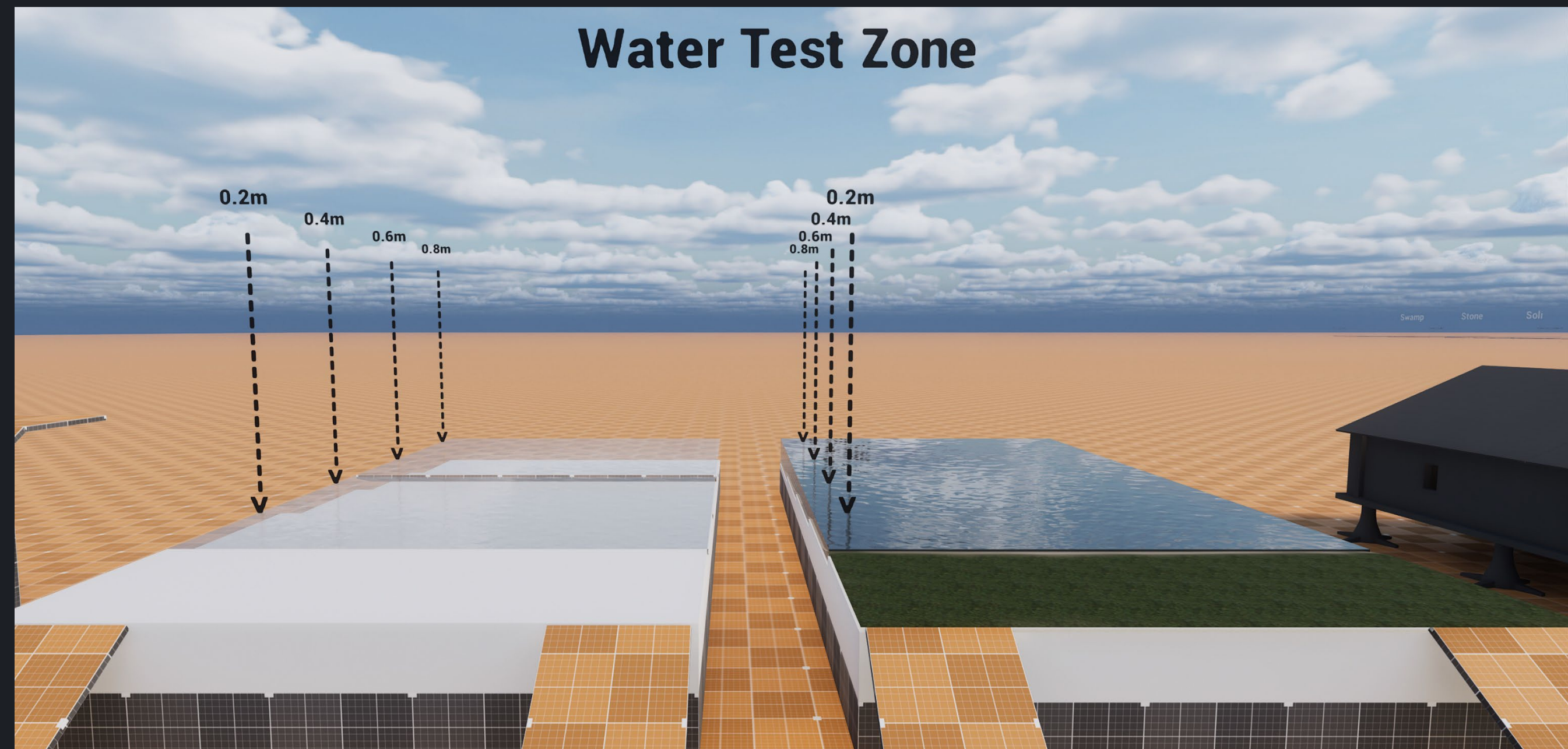
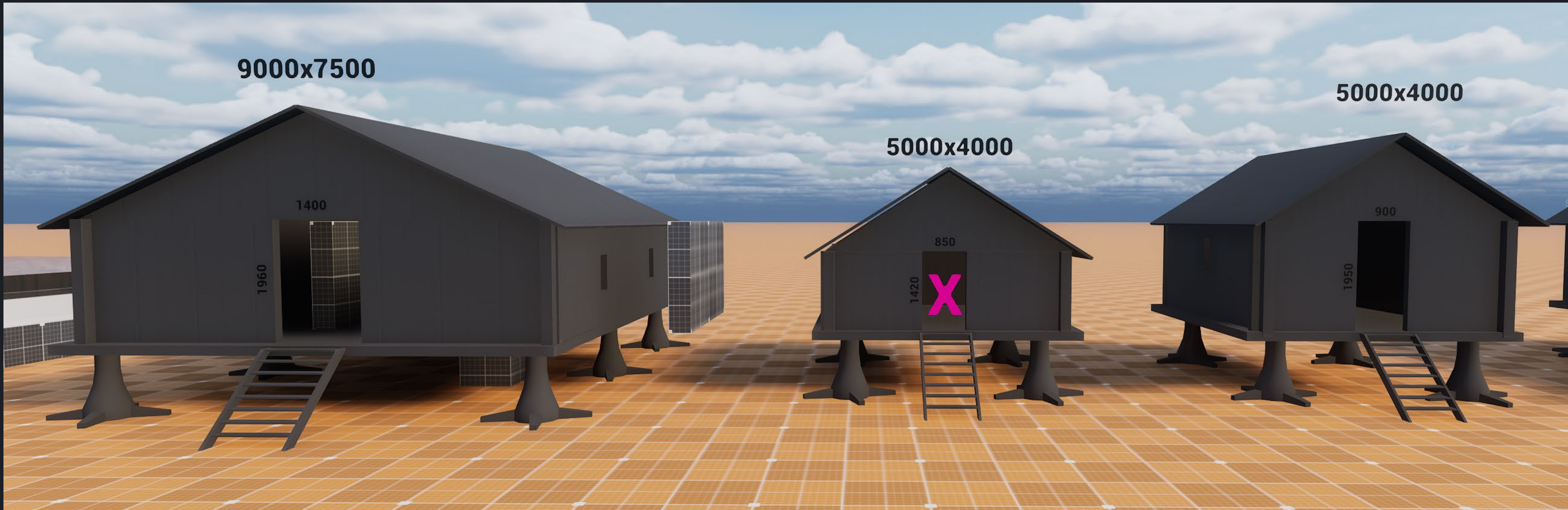


https://drive.google.com/file/d/1mC2zWqeLridF5yZbaPjRNZlypagWUXUq/view?usp=drive_link

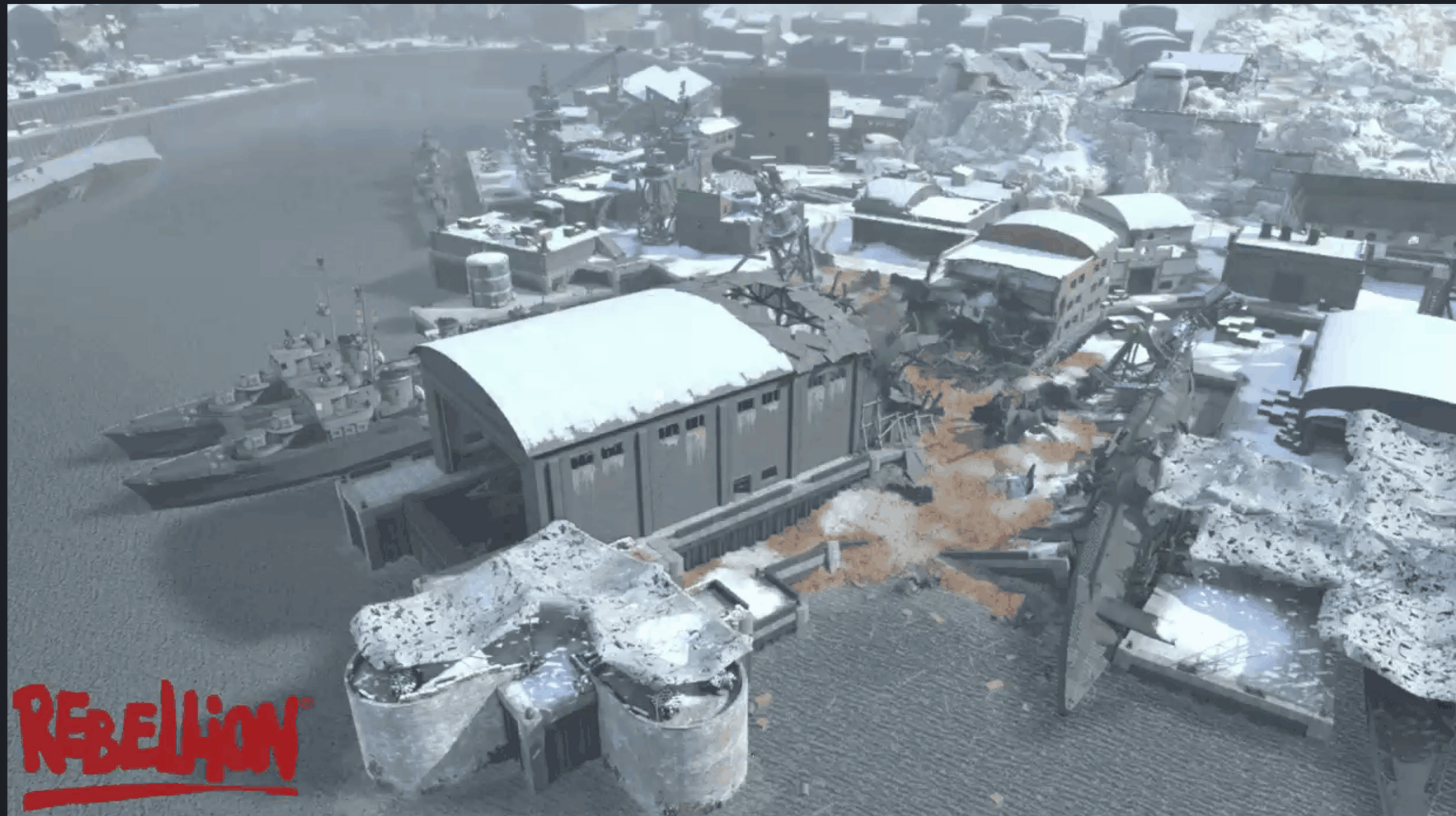
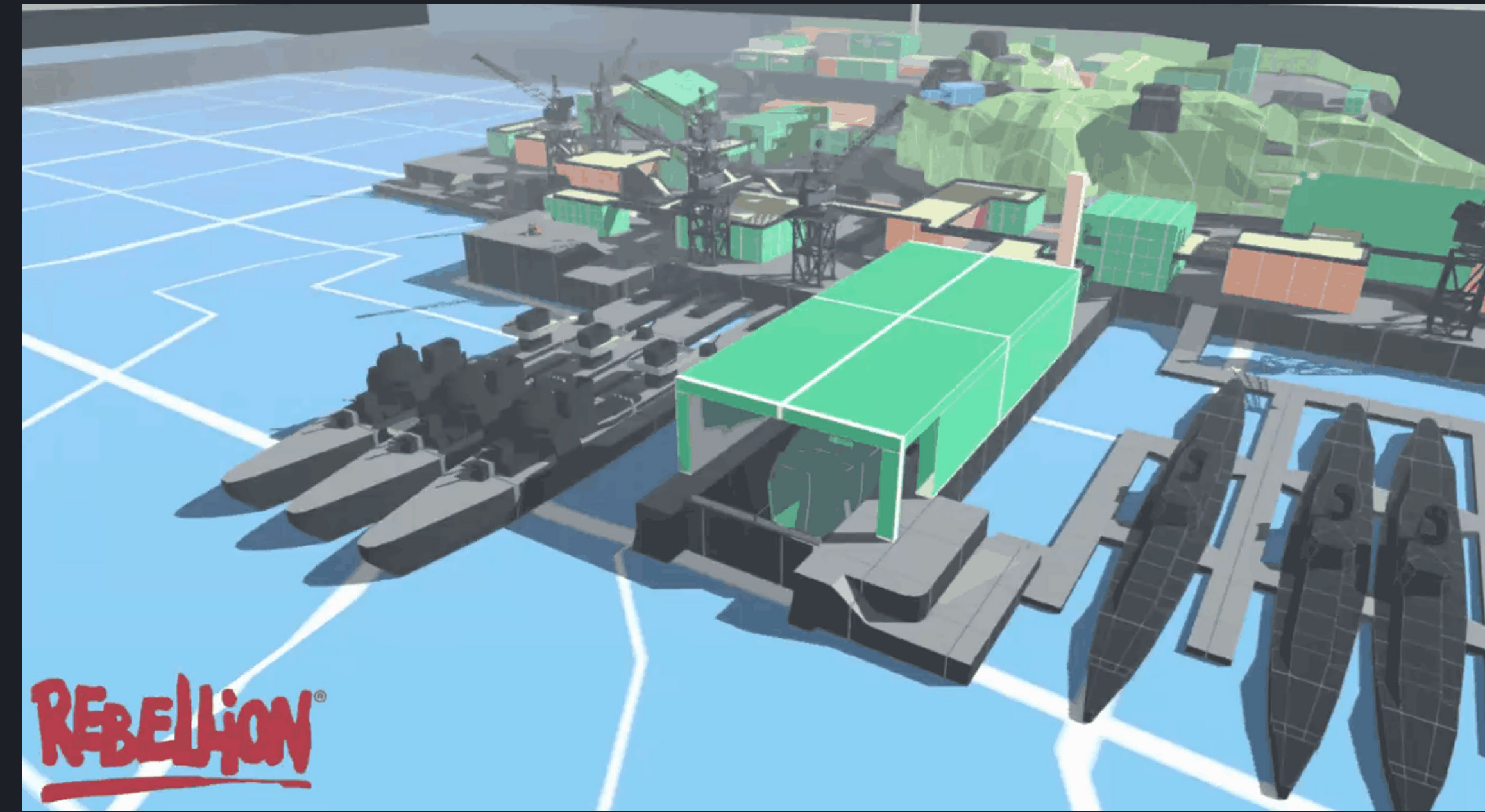
TEST УРОВЕНЬ



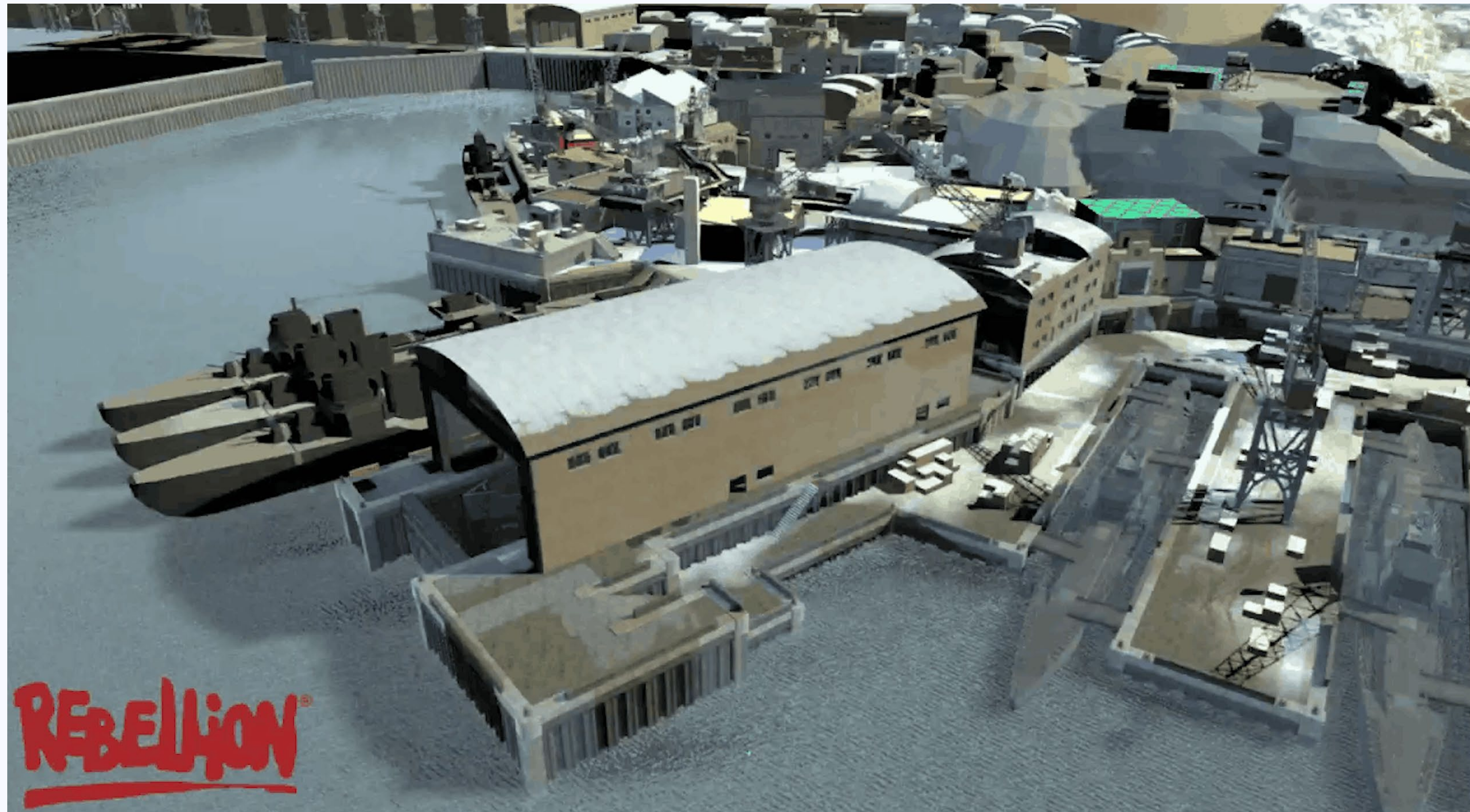
TEST УРОВЕНЬ



BLOCKOUT VS ART



BLOCKOUT VS ART



[https://drive.google.com/file/d/1SyEDZF7gb85wD7jKNWkCoj64Ug0tHdKs/view?usp=drive link](https://drive.google.com/file/d/1SyEDZF7gb85wD7jKNWkCoj64Ug0tHdKs/view?usp=drive_link)



«Атмосферики»





THE THREE
BROOMSTICKS



ZONKO'S

SPORTING NEEDS

AND DEATH



- Speak with Agabus Philbert
- Speak with Otto Dibble



Gameplay UI elements including:

- A set of diamond-shaped icons for different skills or abilities.
- A green health bar at the bottom left of the UI.
- A numerical value '23' next to a green bar.
- A 'ZONKOS' sign on a building to the right.
- A house number '73' above a doorway in the center.

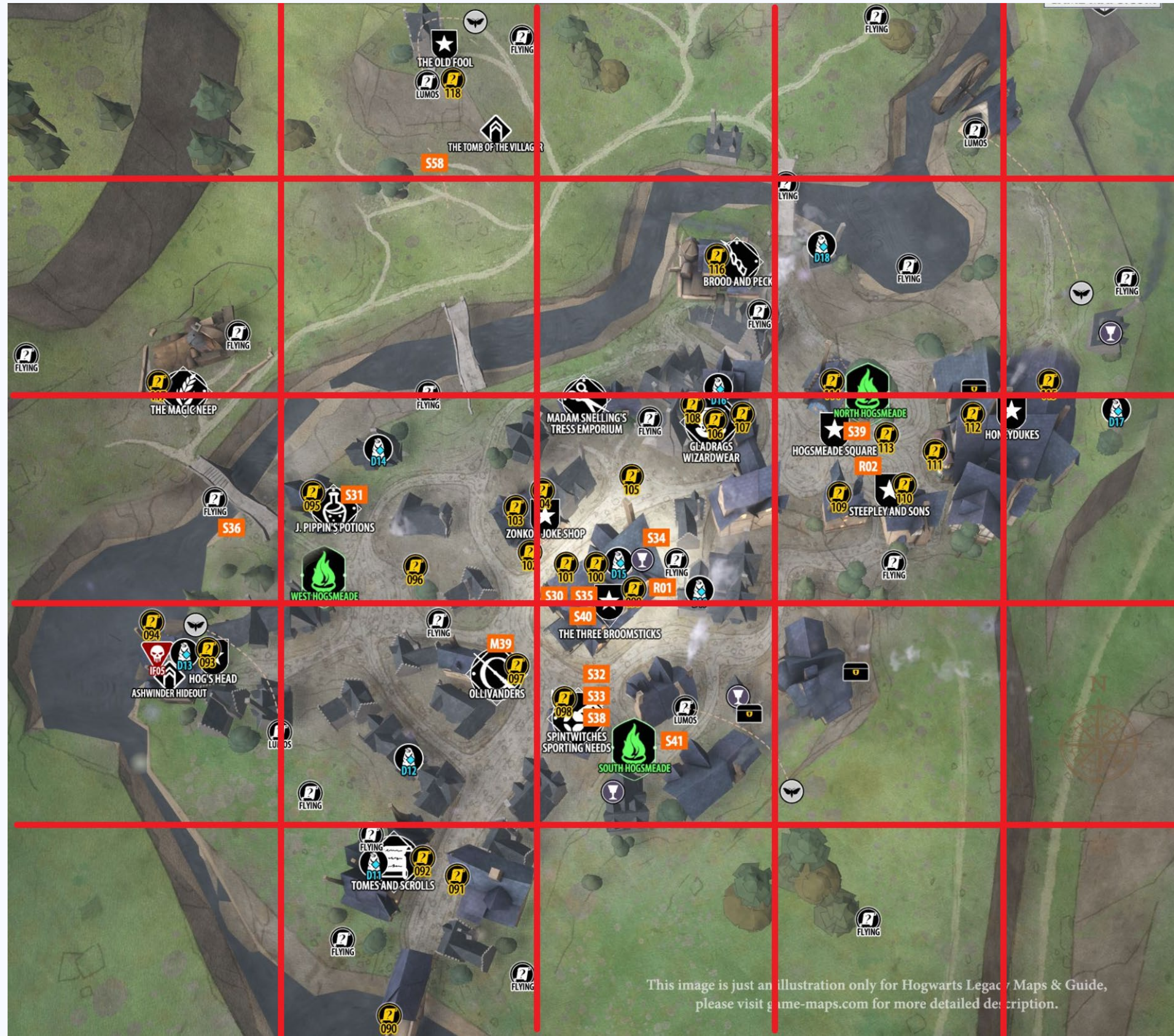


Field Guide Page

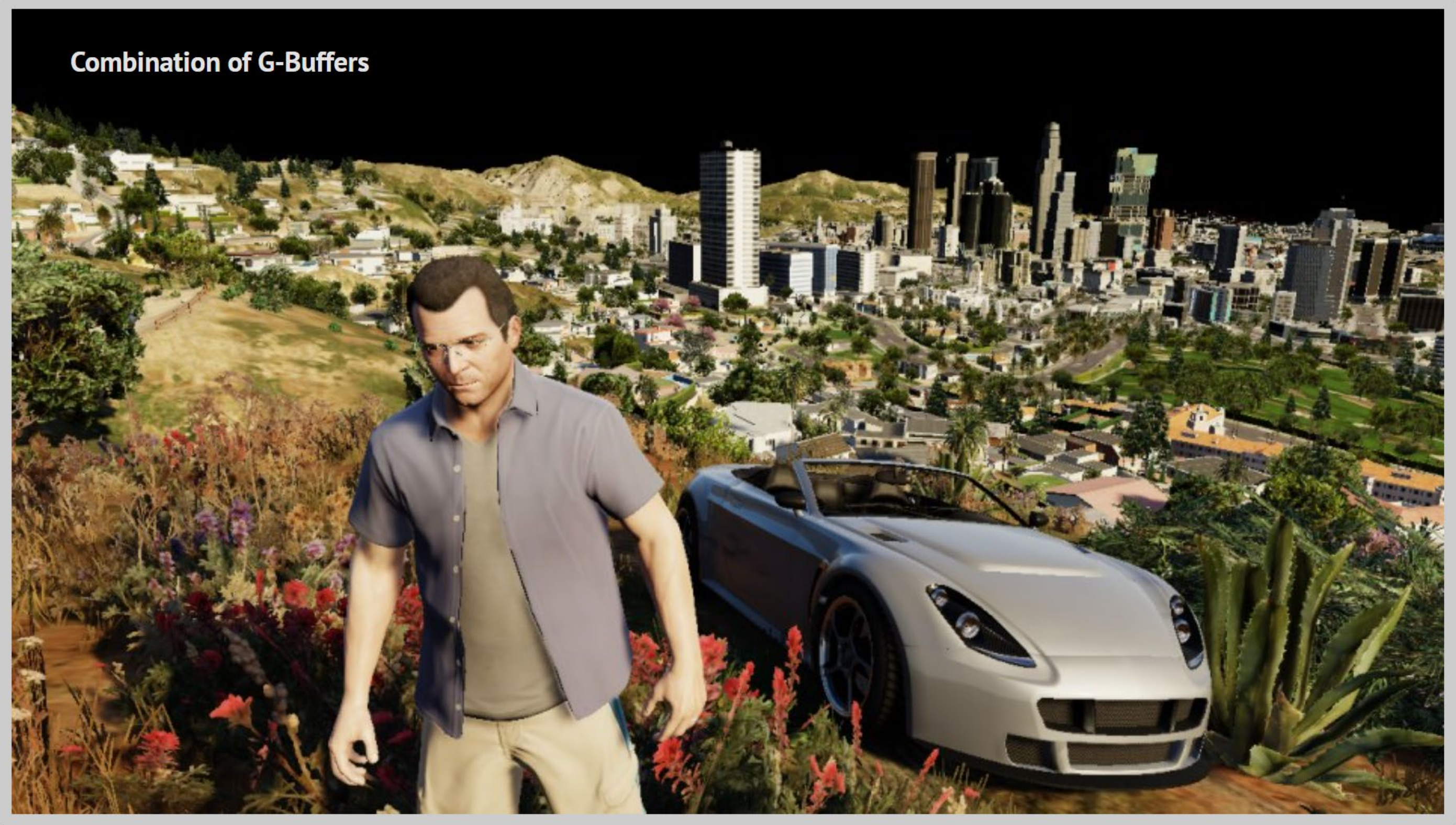
F COLLECT



This image is just an illustration only for Hogwarty Legacy Maps & Guide, please visit game-maps.com for more detailed description.



- **Положение ассетов**
- **Текстуры**
- **Коллизии**
- **Освещение**
- **Вода**
- **Погода**
- **Время суток**





Как QA помогают LD/LA



Проверка навигации, работа с метриками уровня, сверка Blockout с ГД схемой уровня



Проверка блок вольюмов на уровне



Проверка левел арта на соответствие блокауту



Проверка финального расположения объектов на уровне, света, навигации, коллизий объектов и т.д.
Проверка Левел Арта на всех уровнях графики

Класс: маг

2D и 3D художники

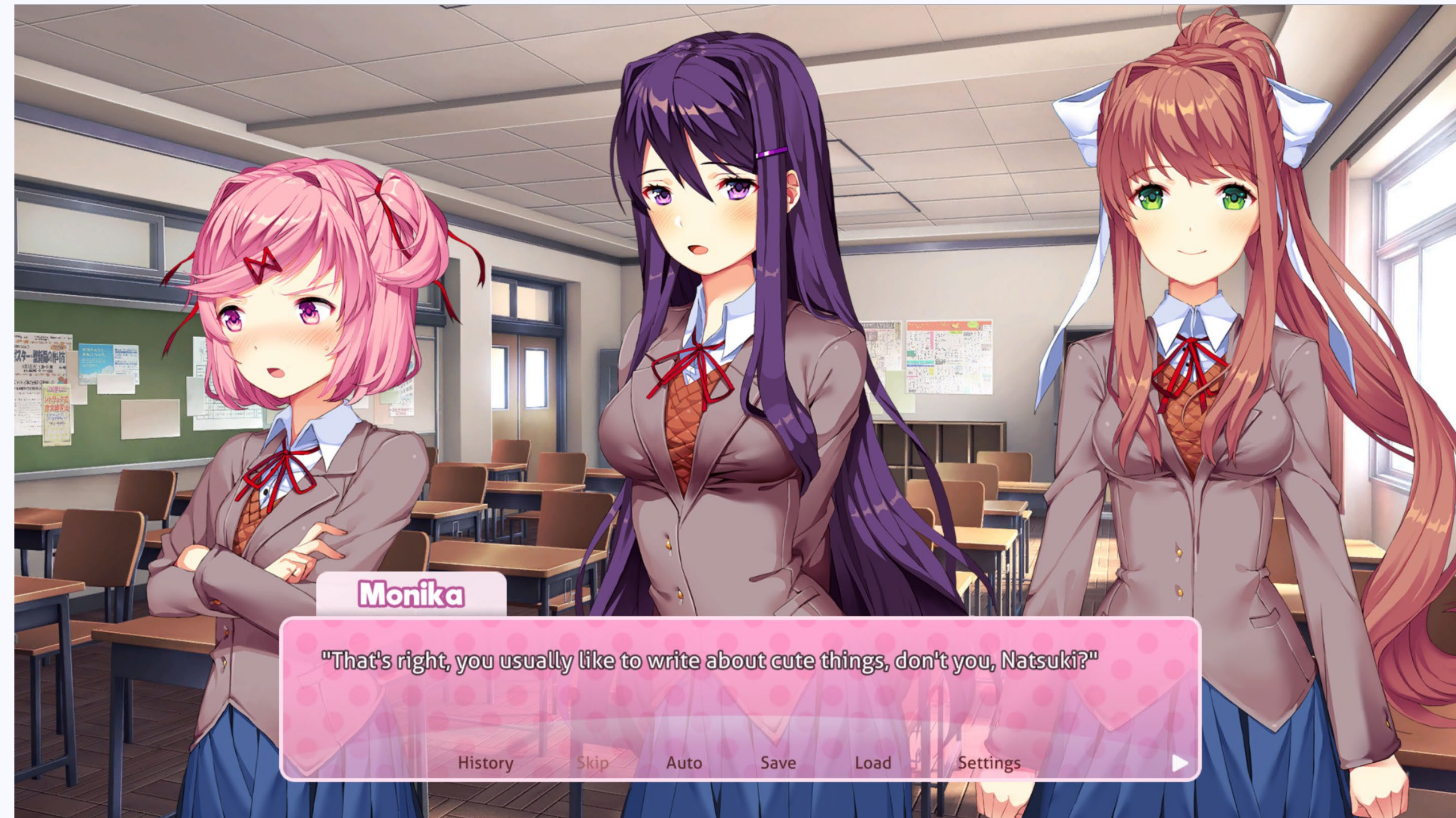
Тех Арт

Приоритетные характеристики: утончённость, мана

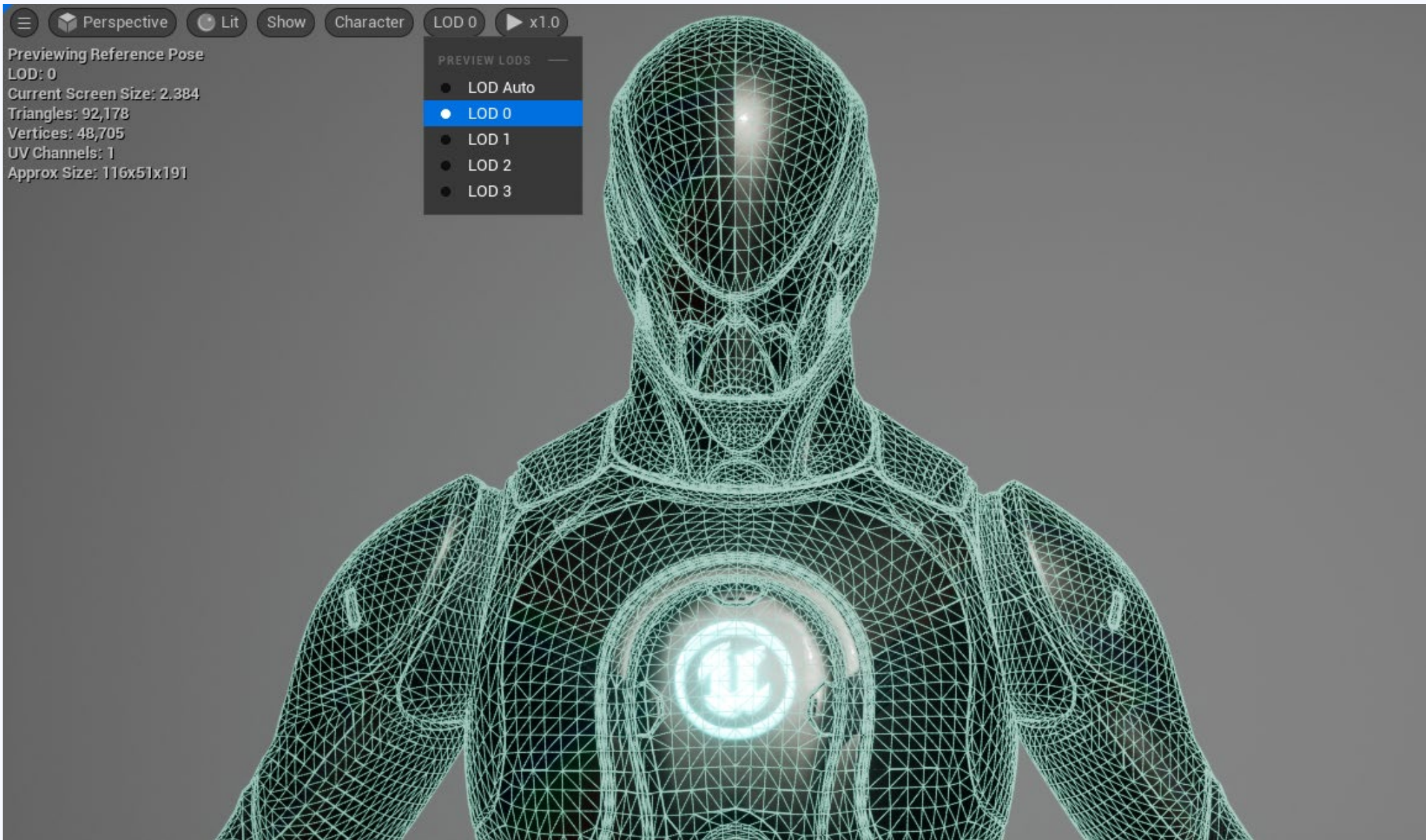
АРТЕФАКТЫ РАБОТЫ:

- Весь 2D арт
- Весь 3D арт
- Атмосферики
- UI/HUD
- Оптимизация

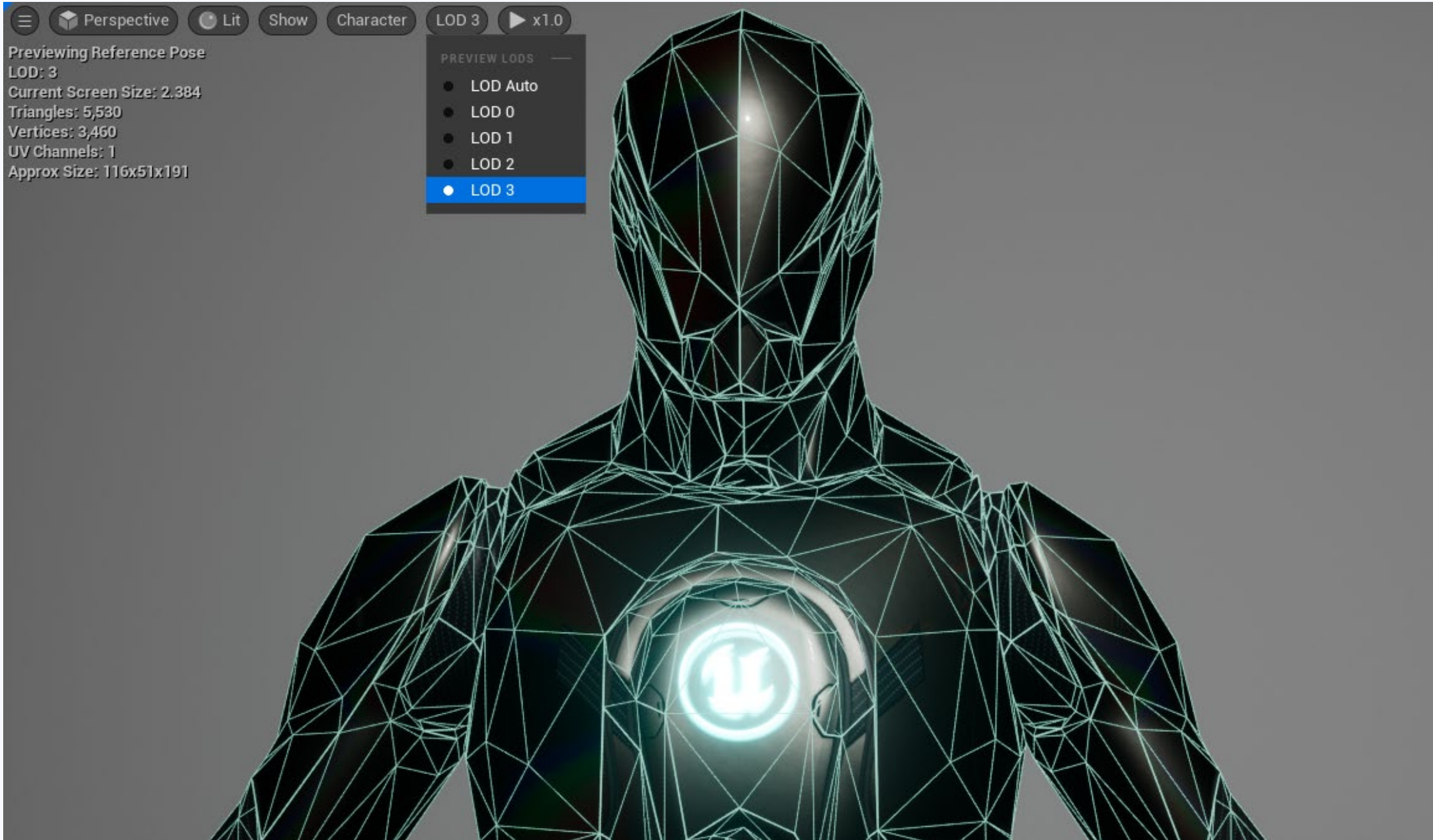




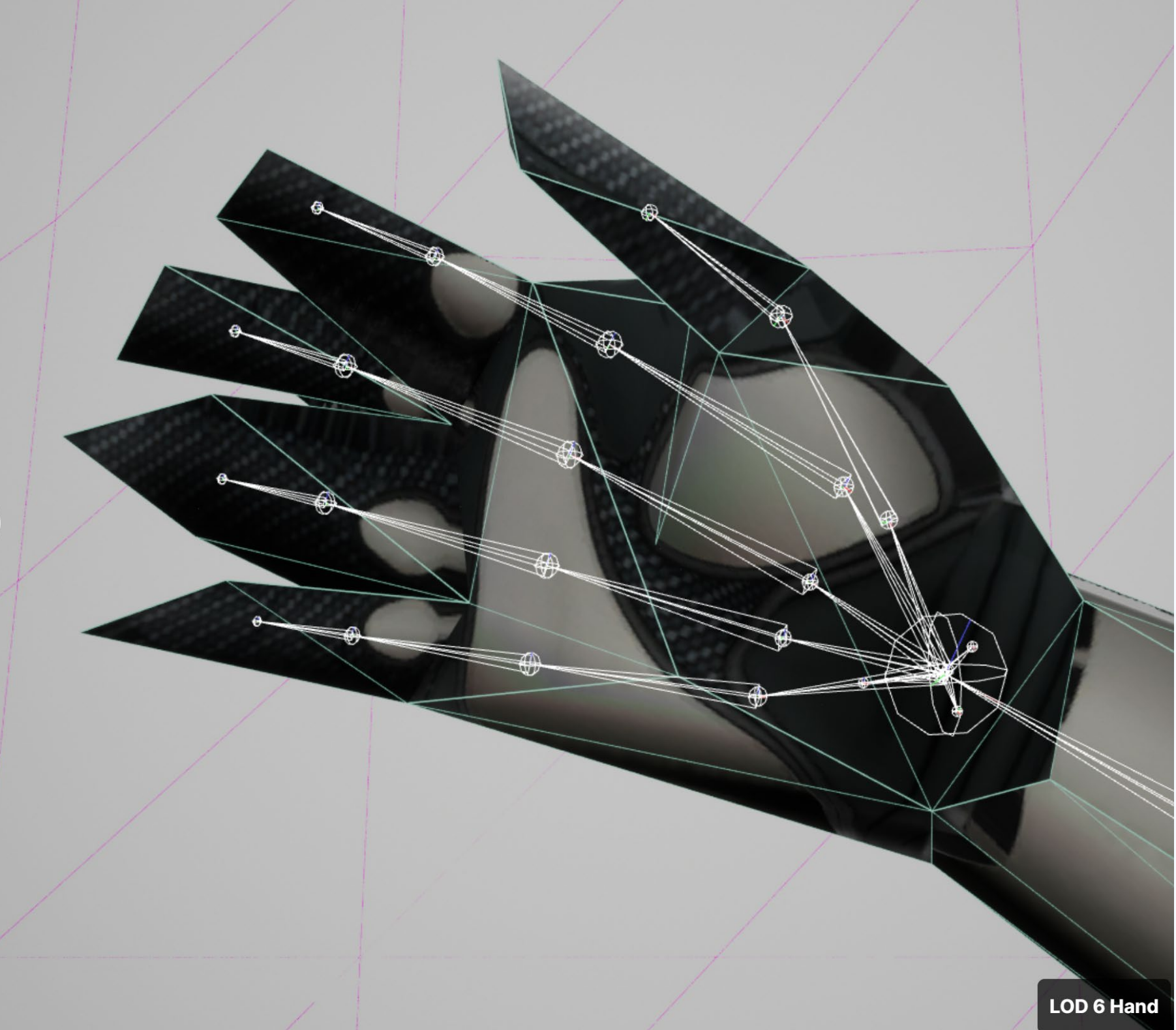
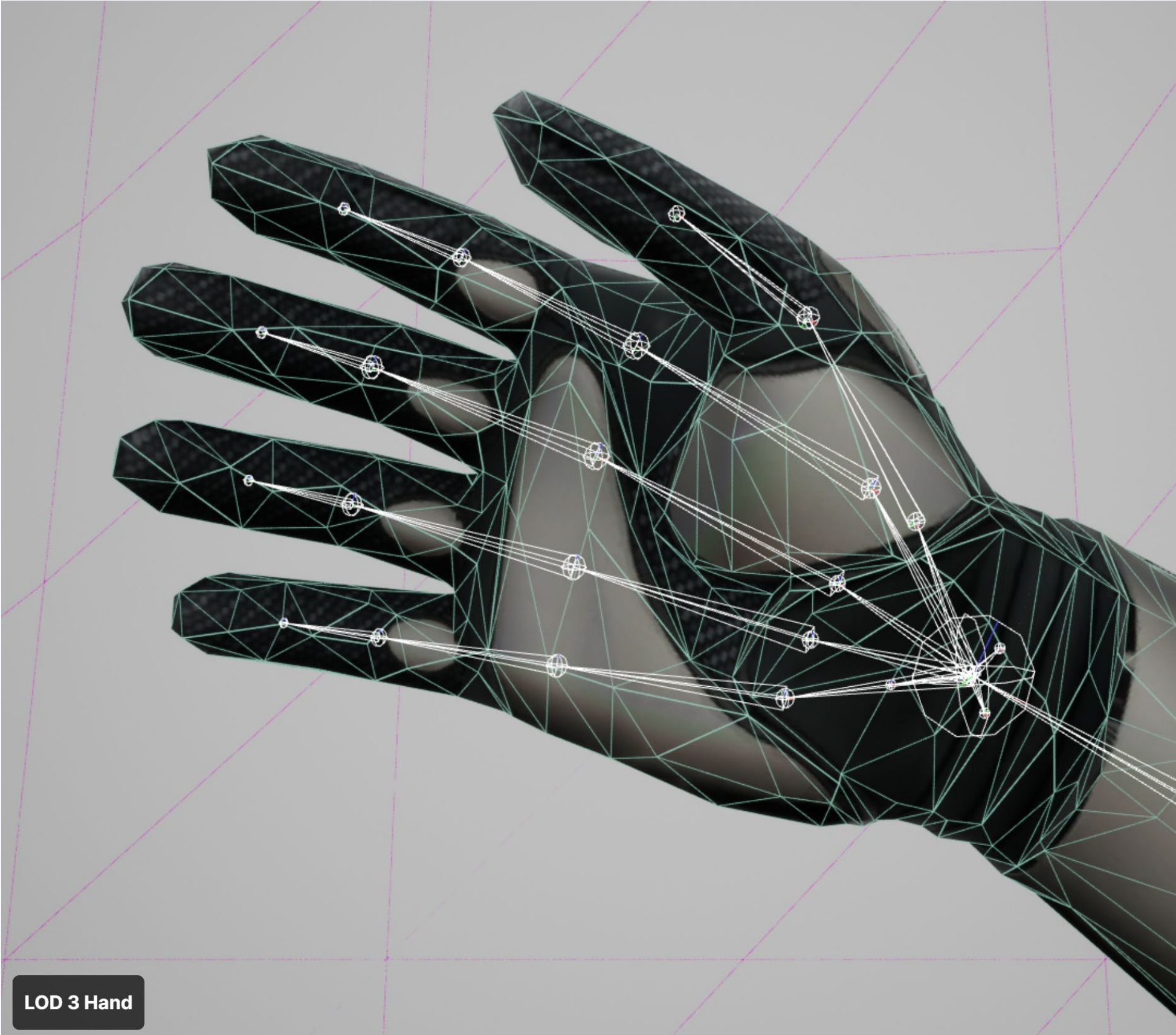


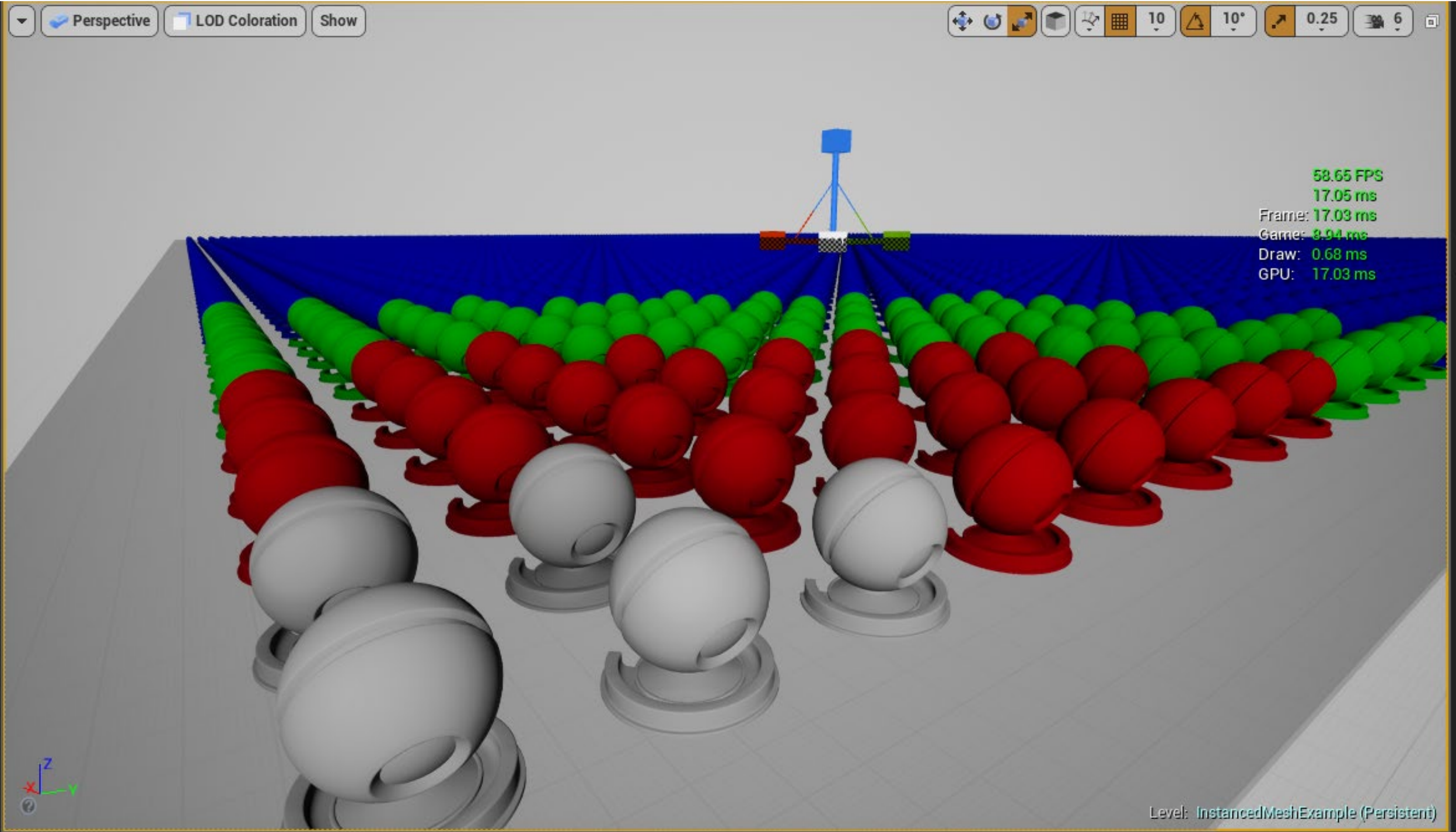


LEVEL OF DETAILS (LOD)




LEVEL OF DETAILS (LOD)



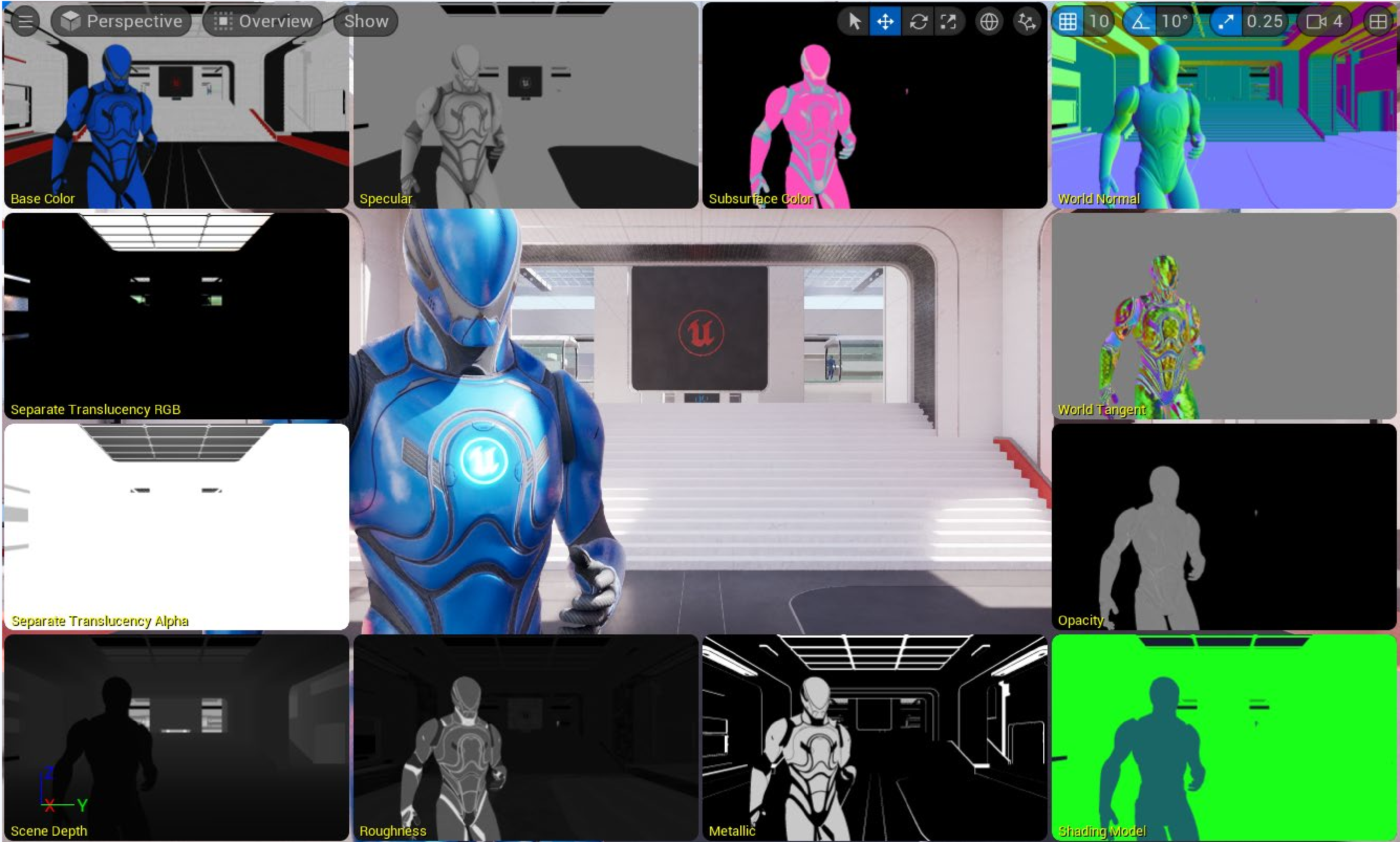


ОКРАСКА LODов

LOD Primitive Coloration

Color								
LOD Primitive Color	0	1	2	3	4	5	6	7

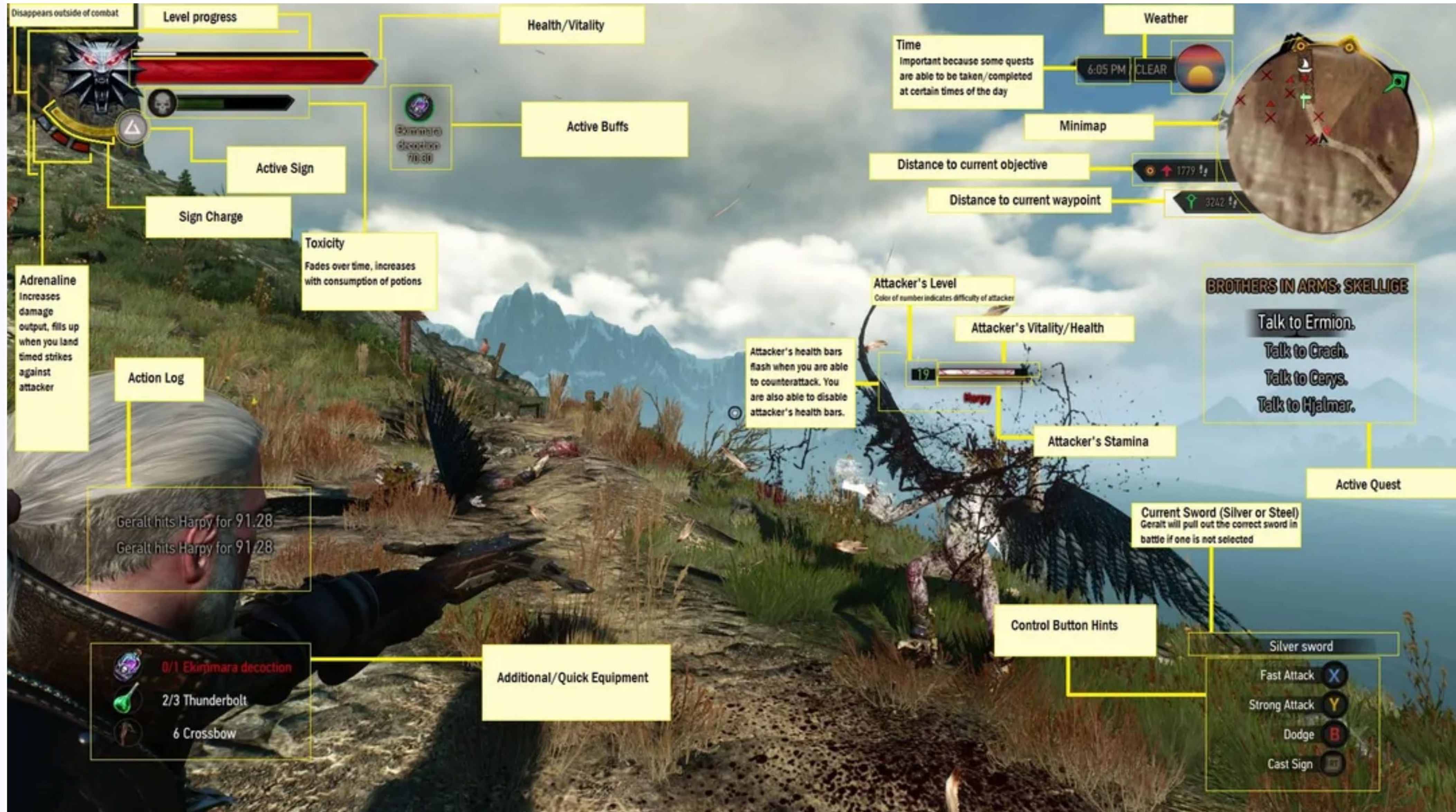
РАБОТА С VIEWMODE



UI / HUD



UI / HUD



UI / HUD



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Как QA помогают 2D/3D художникам, Тех Арту



Проверка 2D ассетов на соответствие техническим требованиям



Проверка LOD-ов 3D моделей, проверка их текстур с использованием различных режимов отображения (G-Buffer)



Проверка UI и HUD игры



Начало проверки оптимизации игры

Класс: шаман АНИМАТОРЫ

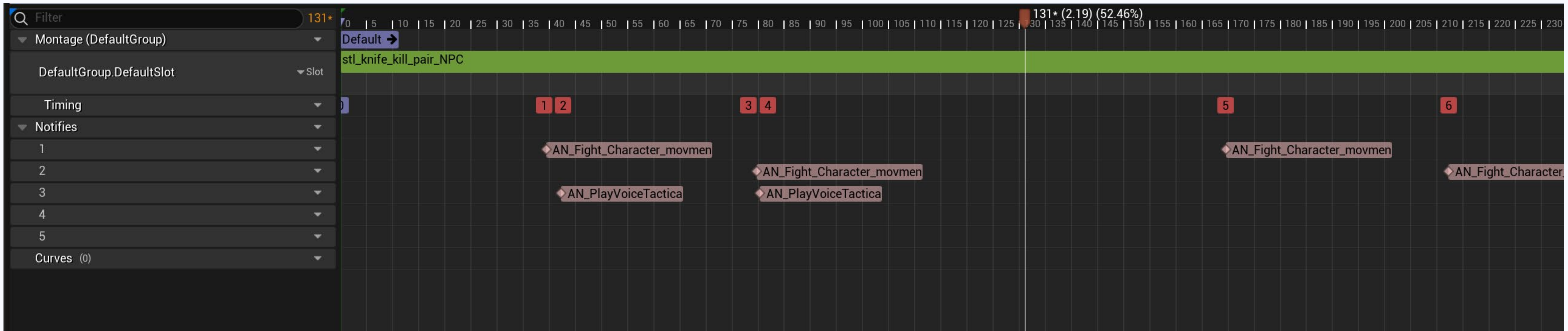
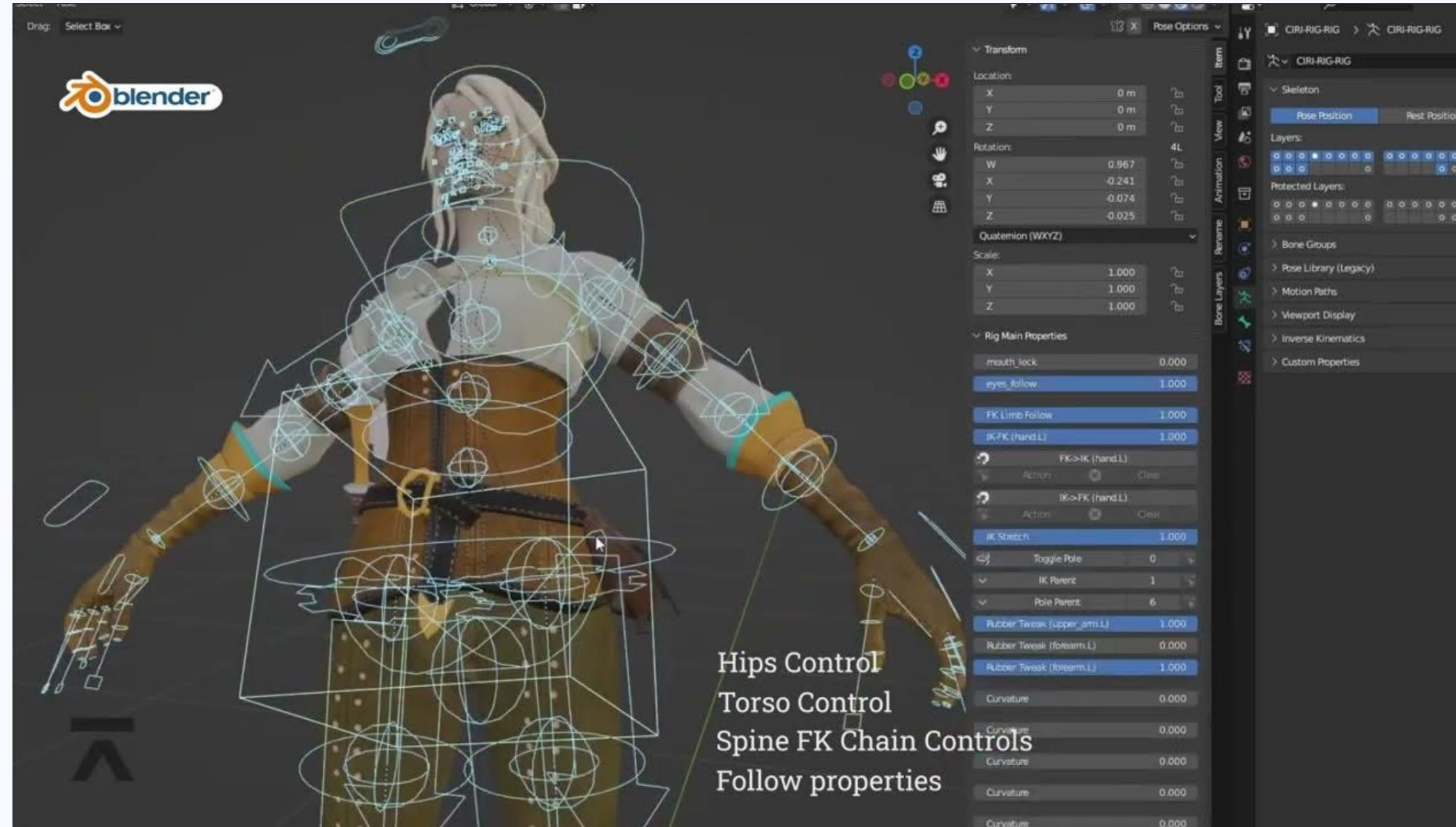
Приоритетные характеристики:
мана, призыв духов анимации

АРТЕФАКТЫ РАБОТЫ:

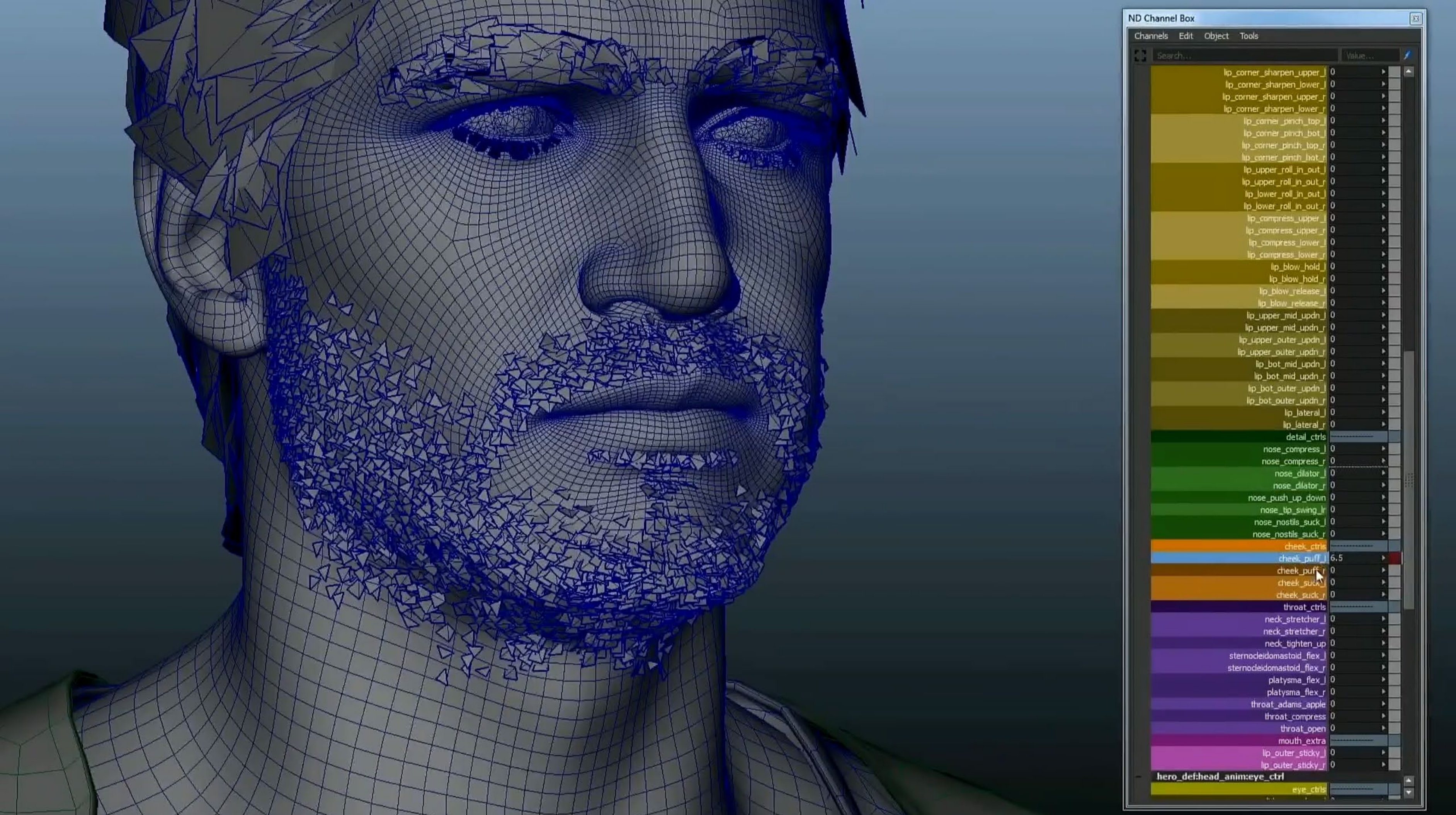
- Ассеты (модели) с анимациями
- Аним монтажи



ANIM-МОНТАЖИ



BLENDSHAPE



[https://drive.google.com/file/d/1s8tcOX1PWI-4vAgFJKoxfjIRJTIOk6GT/view?usp=drive link](https://drive.google.com/file/d/1s8tcOX1PWI-4vAgFJKoxfjIRJTIOk6GT/view?usp=drive_link)

BLENDSHAPE



BLENDSHAPE



[https://drive.google.com/file/d/1I3lvolm9cxx_LPNf8jyOV3J2FOllv-As/view?usp=drive link](https://drive.google.com/file/d/1I3lvolm9cxx_LPNf8jyOV3J2FOllv-As/view?usp=drive_link)






АНИМАЦИИ



[https://drive.google.com/file/d/1o23opi3DwoWUAQSG1WtGckQ03VebIkjH/view?usp=drive link](https://drive.google.com/file/d/1o23opi3DwoWUAQSG1WtGckQ03VebIkjH/view?usp=drive_link)

Как QA помогают аниматорам



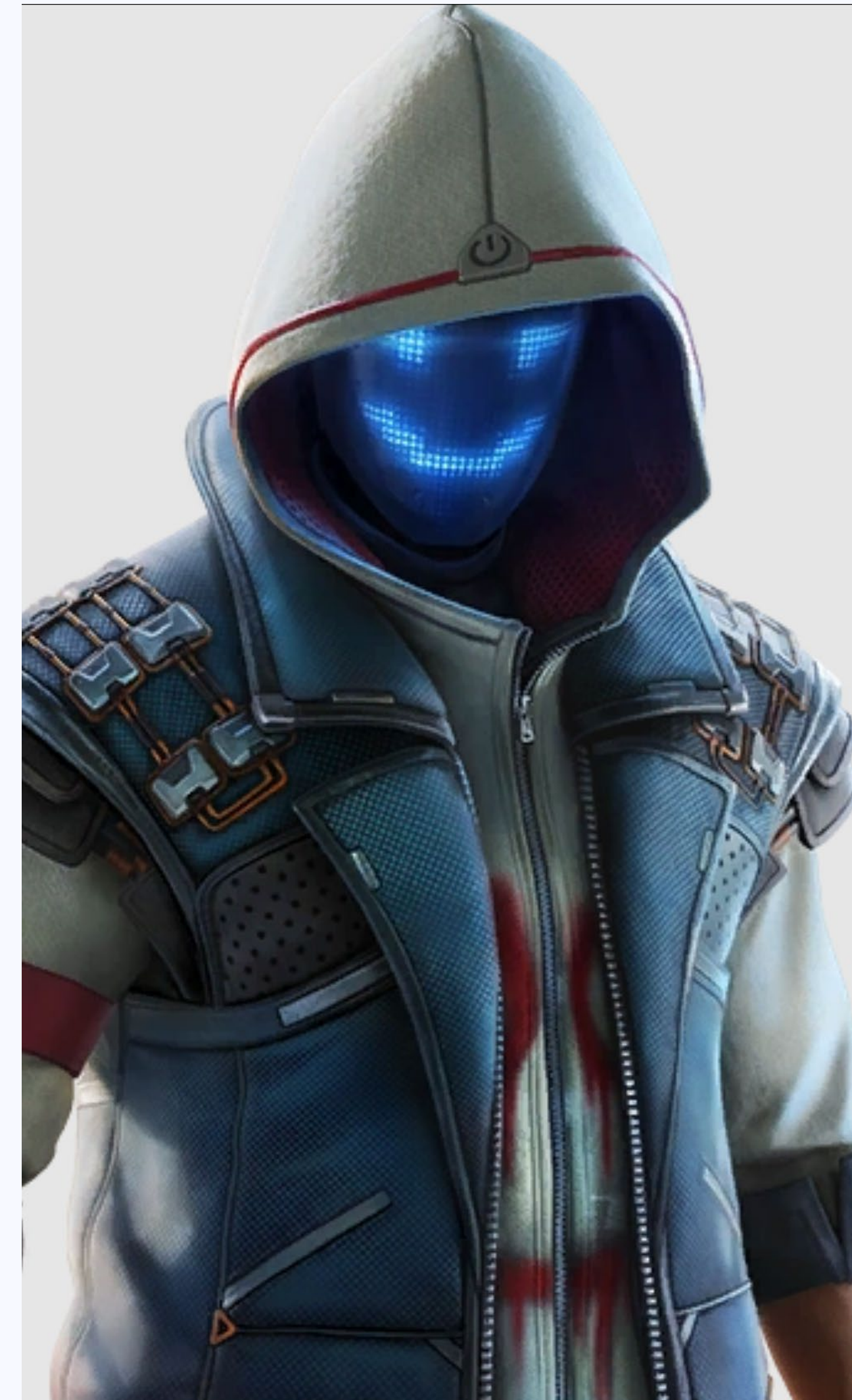
-  Проверка финальных анимаций (костные и blendshape)
-  Проверка правильности использования моделей и мувсетов
-  Проверка парных анимаций в игровых условиях

Класс: плут (rogue) VFX DESIGNERS

Приоритетные характеристики:
незаметность, мана

АРТЕФАКТЫ РАБОТЫ:

- Визуальные эффекты для разных уровней графики
- Анимации к VFX



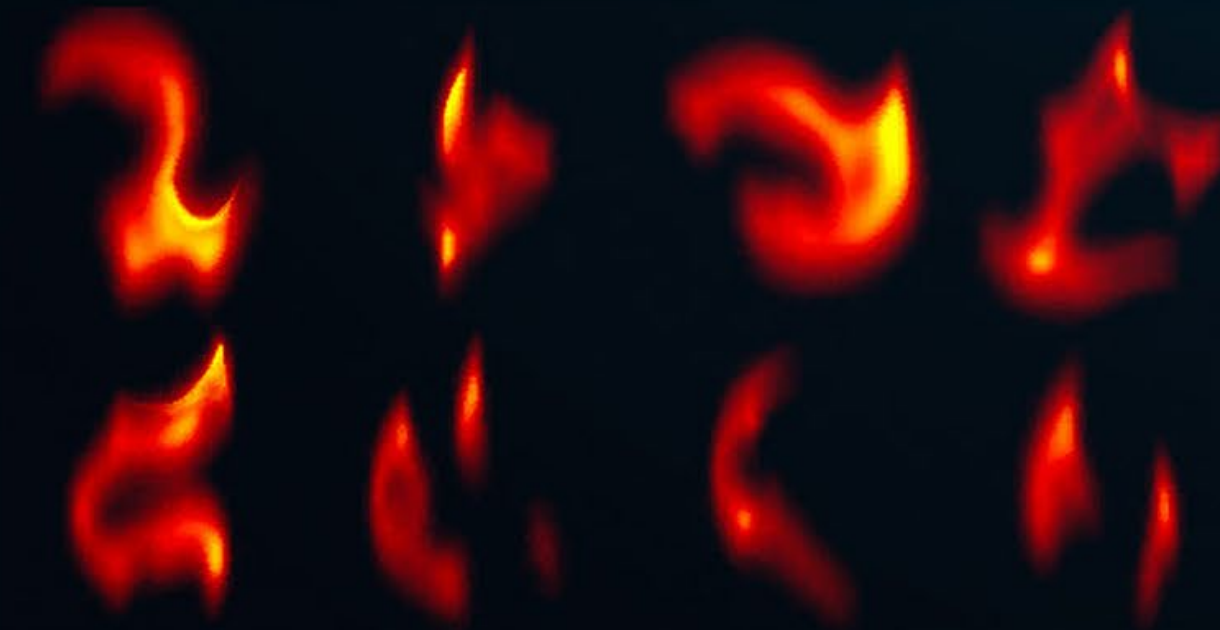
SECTION V // SHAPES

USING SHAPE LANGUAGE TO DEFINE OUR VFX STYLE

Shape is another major element that defines a VFX art style and can help to reduce visual noise. Common shapes include: concise detail, hand-painted textures, mixture of soft and sharp shapes, well-defined silhouettes and moving object textures.

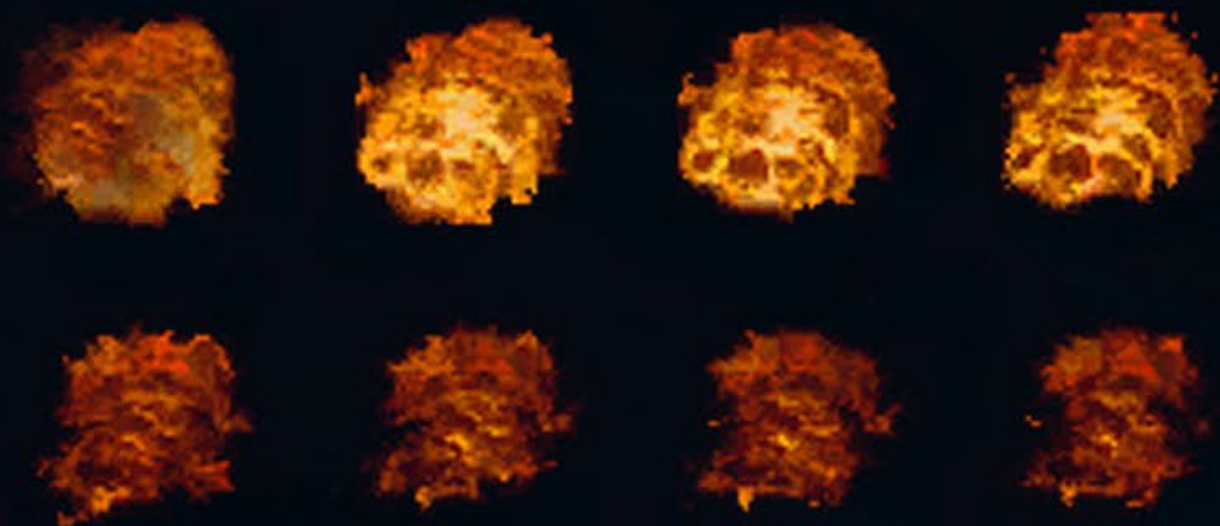
VFX TEXTURE SHAPE GUIDELINES

- ALL TEXTURES NEED TO BE HAND-PAINTED WITH CONCISE DETAIL
- TEXTURES NEED TO BE A MIXTURE OF SOFT AND SHARP SHAPES



✓ ACCURATE REPRESENTATION

A combination of hand-painted textures with a combination of soft and hard defining lines work best.



✗ INACCURATE REPRESENTATION

Avoid using photographs texture or visuals with superfluous detail because it creates unnecessary noise.

SECTION VI // TIMING

USING TIMING TO COMMUNICATE GAMEPLAY

An effect's timing communicates specific gameplay moments.



GANGPLANK BARREL EXPLOSION

Gangplank's barrel explosion is a good example of showing different stage of effects; it communicates gameplay timing clearly

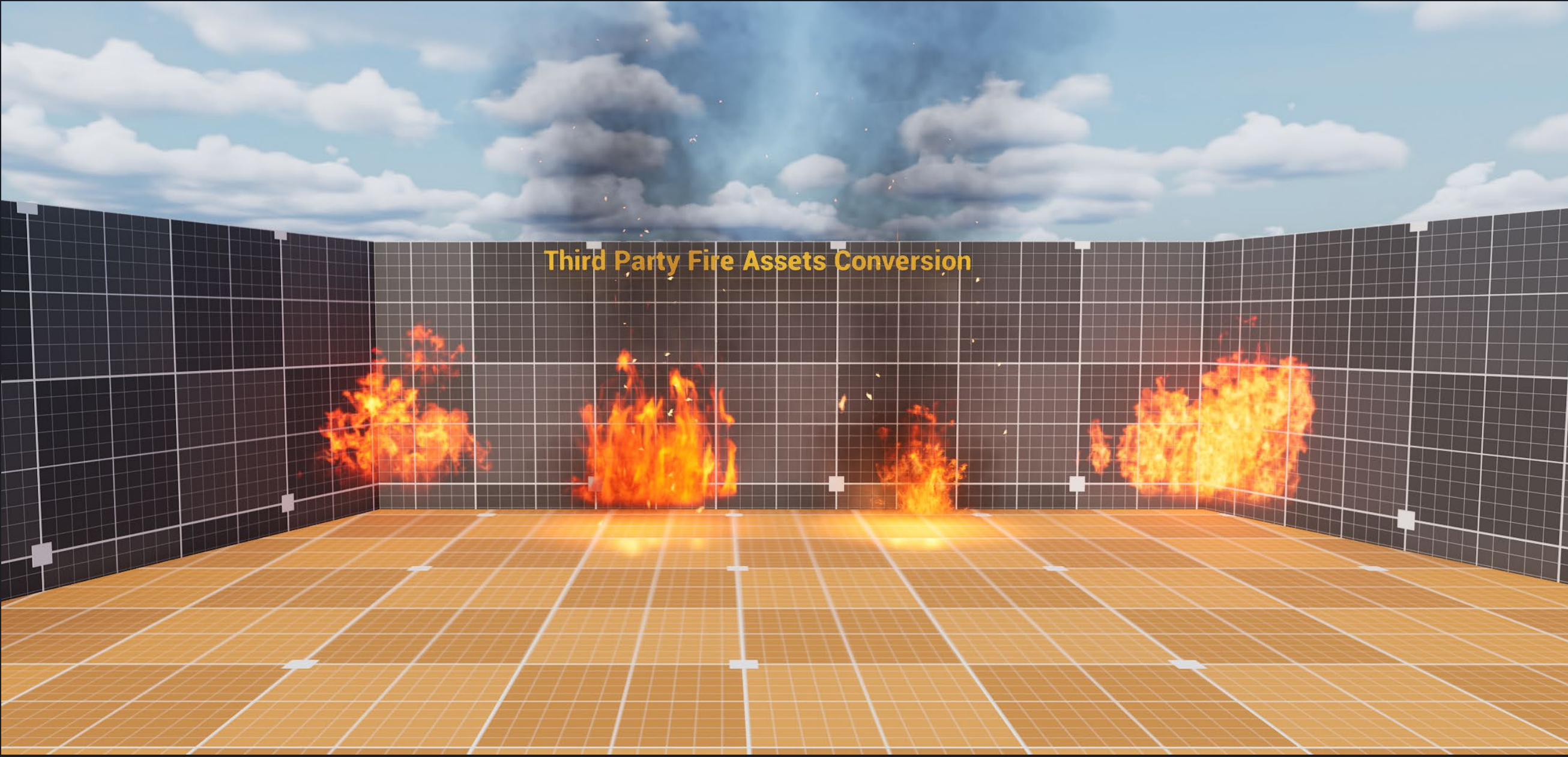
ANTICIPATION

MAIN EXPLOSION

DISSIPATION



VFX НА TEST УРОБНЕ



Как QA помогают VFX дизайнерам



Проверка VFX на разных уровнях графики



Проверка VFX с разными настройками эффекта в игровых условиях

Класс: бард

SOUND DESIGNERS

Приоритетные характеристики:

призыв чеканной монеты и наличие рядом ведьмака

АРТЕФАКТЫ РАБОТЫ:

- Sound Design документ (СДД)
- Музыка и песни
- SFX на все случаи жизни
- Озвучка
- 2D и 3D звуки в игре



SOUND DESIGN ДОКУМЕНТ

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Event Name	Asset Name	Type	Description	Audio Channels	Audio Source	Parameter	Parameter Description	Priority	2D or 3D	Bank	OBS	Refinement	Status
2	SCREEN / STAGE / GROUP (e.g.: Menu)													
3	MenuMusic	mus_gamename_menu_loop	MUS	Music for the menu screen	stereo	Listener	-	-	highest	2D	Main		Final	To do
4	PlayButton	sfx_ui_button_play	SFX	Play Button sound	mono	Listener	-	-	highest	2D	Main		Placeholder	Working
5	SCREEN / STAGE / GROUP (e.g.: Core Gameplay Loop)													
6	GameplayMusic	mus_gamename_gameplay_base_a	MUS	Rhythm section for the gameplay music, part A	stereo	Listener	-	-	highest	2D	Stage1	System randomizes melodies for parts A and B in the music	Final	Done
7		mus_gamename_gameplay_base_b	MUS	Rhythm section for the gameplay music, part B	stereo		-	-	highest	2D				Done
8		mus_gamename_gameplay_melody_a1	MUS	Melody variation for the gameplay music, part A	stereo		-	-	highest	2D				Revise Implementation
9		mus_gamename_gameplay_melody_a2	MUS	Melody variation for the gameplay music, part A	stereo		-	-	highest	2D				Revise Implementation
10		mus_gamename_gameplay_melody_a3	MUS	Melody variation for the gameplay music, part A	stereo		-	-	highest	2D				Revise Implementation
11		mus_gamename_gameplay_melody_b1	MUS	Melody variation for the gameplay music, part B	stereo		-	-	highest	2D				Revise Asset
12		mus_gamename_gameplay_melody_b2	MUS	Melody variation for the gameplay music, part B	stereo		-	-	highest	2D				Revise Asset
13		mus_gamename_gameplay_melody_b3	MUS	Melody variation for the gameplay music, part B	stereo		-	-	highest	2D				Revise Asset
14	ResultStingers	stg_gamename_gameplay_win	STING	Stinger for when the player wins	stereo	Listener	Results	0= Win 1= Lose	highest	2D	Main		Placeholder	Working
15		stg_gamename_gameplay_lose	STING	Stinger for when the player loses	stereo				highest	2D			Placeholder	Sent
16	Stage1Ambience	amb_gameplay_stage1_loop	AMB	Ambience loop for stage 1	stereo	Listener	-	-	medium	2D	Stage1		Placeholder	To do
17	BirdAmbience	amb_gameplay_birds_var0(1-5)	SFX	Birdsong variations	mono	Trees	-	-	low	3D	Main	Used in a scatterer container	Final	Done
18	RocketLauncherShot	sfx_character_weapon_rocketlauncher_shot	SFX	Rocket Launcher shot	mono	Listener	-	-	high	2D	Main		Placeholder	Ready to QA
19	RocketLauncherMissile	sfx_character_weapon_rocketlauncher_thrust_loop	SFX	Rocket Launcher thrust engine	mono	missile	-	-					Placeholder	Sent
20		sfx_character_weapon_rocketlauncher_explosion_var0(1-3)	SFX	Rocket Launcher rocket explosion variations	mono	missile	EnemySize	0= small enemy; 1= medium enemy; 2= large enemy	high	3D	Main		Placeholder	Hold
21			SFX		Reverb							0= no reverb; 1= medium room reverb; 2= cave reverb		Placeholder

The screenshot displays the Unreal Engine 4 interface during a live capture session. The top window shows the 'Capture Log' for 'foley_footsteps_enemy', listing various events and errors. The 'Performance Monitor' window at the bottom left shows three graphs: 'CPU - Plug-in Total', 'CPU - Total', and 'Spatial Audio - CPU', along with a table of performance metrics. The right side of the image shows a third-person view of a character in a dark, hooded outfit in a post-apocalyptic environment with dilapidated buildings and a green van.

Capture Log

Timestamp	Type	Description
0:33:26.506	Switch	Switch to "PM_Mud"
0:33:26.506	Switch	Switch to "PM_Water_Thick_off"
0:33:26.506	Switch	Switch to "PM_Water_Thin_on"
0:33:26.506	Event	Event Triggered
0:33:26.506	Switch	Switch to "Default"
0:33:26.506	Switch	Switch to "Default"
0:33:26.506	Switch	Switch to "Default"
0:33:26.506	Event	Event Triggered
0:33:26.698	Error	Event ID not found
0:33:26.698	Error	Failed posting event: glock_ess
0:33:26.698	Switch	Switch to "PM_Mud"
0:33:26.698	Switch	Switch to "PM_Water_Thick_off"
0:33:26.698	Switch	Switch to "PM_Water_Thin_on"
0:33:26.698	Event	Event Triggered
0:33:26.698	State Changed	From state "battle_intensity_normal" to state "battle_intensity_combat_simple"
0:33:26.698	Switch	Switch to "PM_Mud"
0:33:26.698	Switch	Switch to "PM_Water_Thick_off"
0:33:26.698	Switch	Switch to "PM_Water_Thin_on"
0:33:26.698	Event	Event Triggered
0:33:26.698	Error	Selected node not available. Make sure the structure associated to the event is load

Performance Monitor

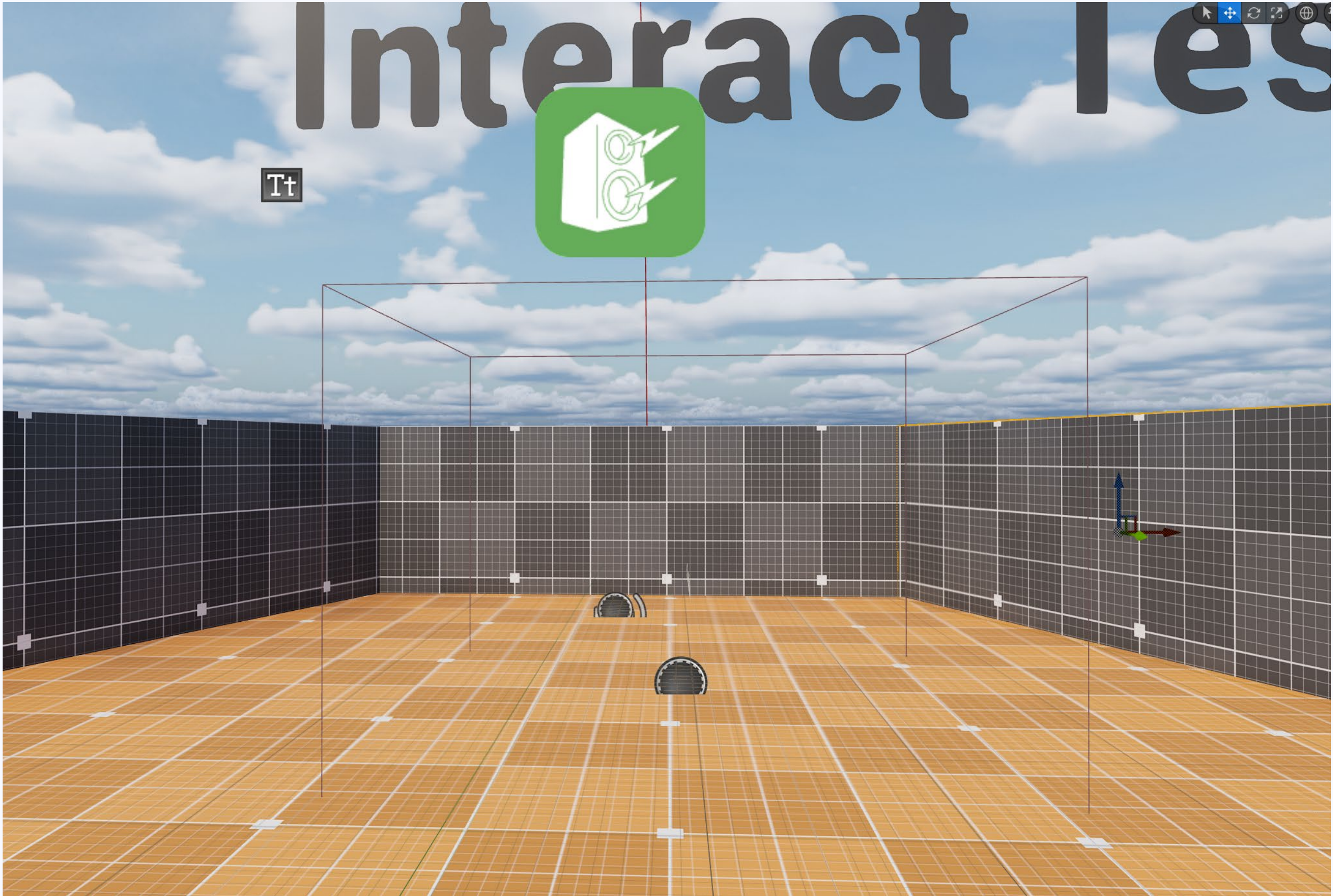
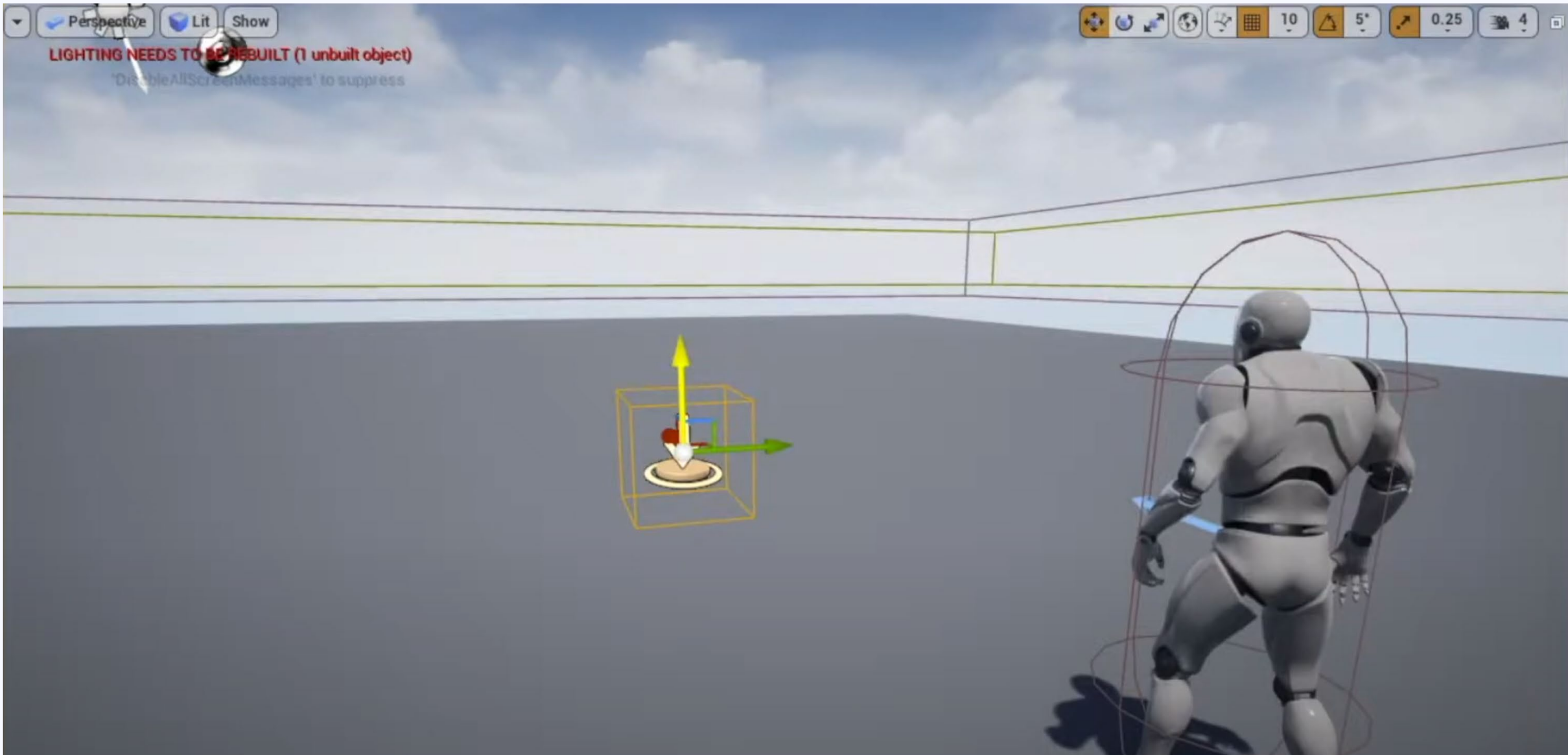
Name	Value
CPU - Plug-in Total	3.94 %
CPU - Total	7.00 %
Loaded Banks (Memory)	0 Bytes
Spatial Audio - CPU	0.60 %
Spatial Audio - Diffraction Edges	96
Spatial Audio - Emitters Processed	2
Spatial Audio - Path Validation CPU	0.16 %
Spatial Audio - Portal Path Validation CPU	0.00 %
Spatial Audio - Portal Raytracing CPU	0.00 %
Spatial Audio - Primary Rays	30
Spatial Audio - Raytracing CPU	0.00 %
Spatial Audio - Triangles	96
Total Streaming Bandwidth	0 Bytes/s
Total Streaming Bandwidth (Low-Level)	0 Bytes/s
Total Used Memory	35.0 MB

Game View

FOV: 68.800003
 Complete Quest: QL_BI_COMBAT_SIMPLE
 MODE_PLAYSTATE_GAME_ROUND_PLAY

18/119/탄발

«2D» и «3D» звук



Как QA помогают Sound дизайнерам



Проверка необходимых звуковых ассетов на основе «Sound Design document»



Проверка 2D и 3D аудио

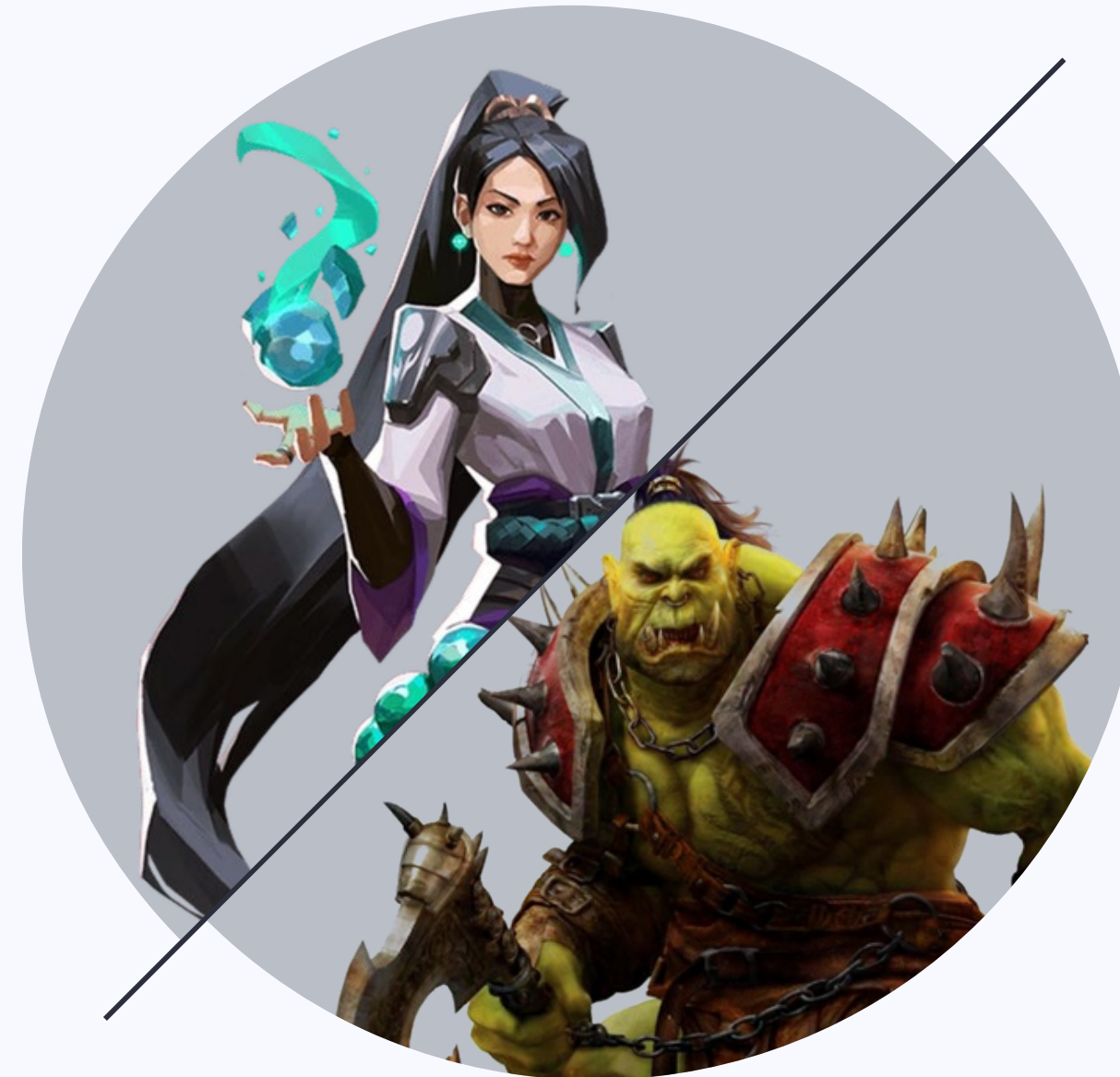


Проверка правильности использования аудио в звуковых каналах игры

QA

Кроме ранее упомянутых работ QA проверяют:

- баланс
- Совместимость (Compatibility)
- Compliance
- I18N & L10N
- Performance
- Playtesting
- Специфические фишки консолей
- Автоматизация тестирования
- Работа с Комьюнити Менеджерами
- И многое другое



Союзник или ...?



ВИДЫ ТЕСТИРОВАНИЯ



Buying a new controller be like



[https://drive.google.com/file/d/1EL5x5qnLbiLVq0Lq_TS5AvjOlodlBOdJ/view?usp=drive link](https://drive.google.com/file/d/1EL5x5qnLbiLVq0Lq_TS5AvjOlodlBOdJ/view?usp=drive_link)

Решение о выпуске игры



**“It’s ok Animal Crossing,
you release when you feel
like it”**

**“Hurry! Hurry! Hurry!
Christmas is coming!!”**

ISTQB® Certified Tester - Game Testing (CT-GaMe)

Specificity of Game Testing

Testing Game Mechanics

Graphics Testing

Sound Testing

Game Level Testing

Game Controllers Testing

Localization Testing

Game Testing Basics

Game Mechanics

Principles and Concepts of Game Graphics

Features of the Sound Content of the Game Product

Game Level Design Principles and Concepts

Principles and Concepts of Game Controllers

Principles and Concepts of Localization Testing

Typical Roles of the Game Development Team

Approaches to Testing Game Mechanics

Approaches to Testing Graphics in Game Products

Types of Defects in Sound Content

Approaches and Execution of Game Level Testing

Approaches to Testing Controllers in Game Products

Types of Localization Defects and their Causes

Testing Activities throughout the Game Software Development Lifecycle

Graphics Test Execution

Approaches to Testing Sound Content in Game Products

Tools Support for Game Level Testing

Tools Support for Game Controllers Testing

Localization Testing Approaches and Execution

Tools Support for Graphics Testing

Sound Test Execution

Tools Support for Localization Testing

Tools Support for Sound Testing

ВЫВОДЫ



- **Game QA вовлечены в активности большинства команд**
- **у Game QA важно выделять свои специализации**
- **играть в игру нужно (много!), но в конце проекта**
- **игровое тестирование – это ещё и работа с около игровыми активностями (комьюнити менеджерами, локализация и многое другое)**



[https://drive.google.com/file/d/1FHR1wmwjZR9q53RDvIlyTvPFEM6YyOnR/view?usp=drive link](https://drive.google.com/file/d/1FHR1wmwjZR9q53RDvIlyTvPFEM6YyOnR/view?usp=drive_link)



@GAMEQACHANNEL