Spirit Overflow

Game Design Document

This document is specifically for game design, other parts such as development, art and UI/UX will have separated documents which will be linked to specific places in this file later(note that all the names in this document are tentative).

Contents

INTODUCTION

Real Sport, Real Esport.
Spirit Overflow is a bike-based team competition game set on a cyberpunk Tokyo. Every match is an intense 3v3 territory battle between a cast of unique heroes, each with their own skills and tactics. By combining physical exertion with esports-based game design, Spirit Overflow is aiming to bring authentic esports experience with high intensity bike workout.

GAME CONTROL

Since the game is not using traditional controllers, the game control will be explained here briefly.

The game integrates with bike trainers, mobile phones and smart watches which send signals via Bluetooth and WIFI as game input.

Movement control
During the game, the player's pedaling will generate speed information which will be sent to control the speed of the character. The mobile phone mounted on the handle of the bike will sends compass information to the game so that the player can control the direction of movement by steering the handle.

Bio data

The smart watches that player wears will send the heartrate data to the game which also affect the gameplay. *(will be further explained in the Full Feature chapter)*

Additional control

In addition to a compass sensor, the mobile phone also serves as an extended screen. During the game, the screen has a game UI that has some buttons to trigger additional controls such as ultimate skills, items or change game camera.

the following is an overview of the system
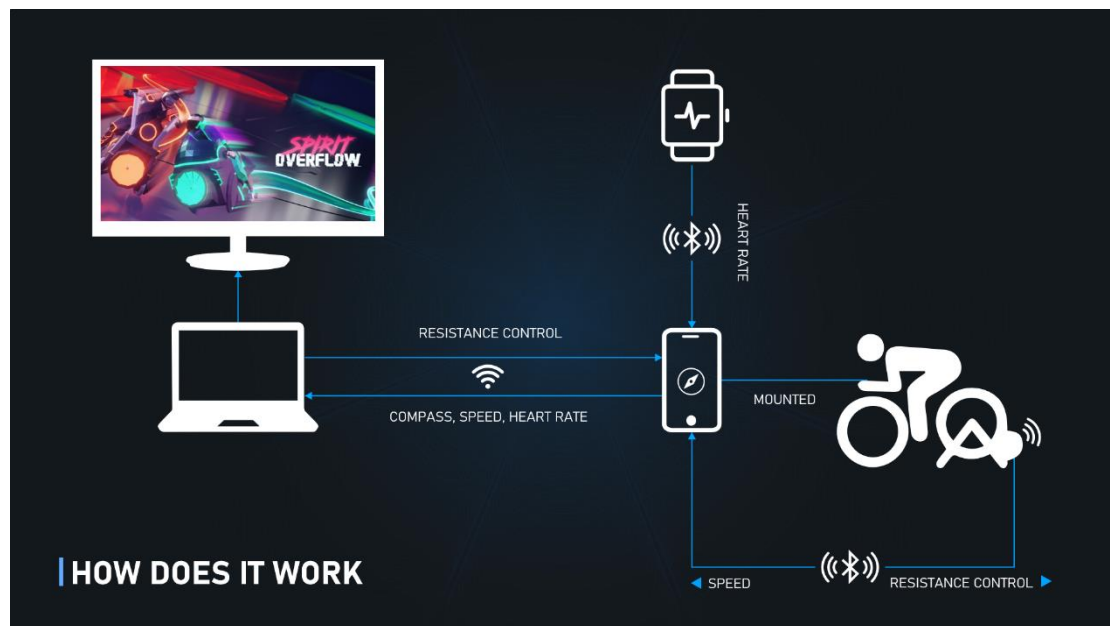
DESIGN PILLARS

Design pillars are MUST-HAVE elements in the game, they are not game features, but what defines the game and make the game great. They should serve as guidance and main design objectives during the design and development process.

Hyper-competitive team-based battles

Just like overwatch or MOBA game, the game will emphasize on competition and team tactics

Numerous heroes with deep tactics

Various heroes with different roles in team tactics.

Easy to play and learn

Despite having deeply strategic tactics and hyper-competitive gameplay, the game should be designed both for hard-core and casual players. It should be an "easy to play, hard to master" kind of game that puts players into different layers by matchmaking system based on their skills. On the surface it should be a simple game that everyone can have fun without having to learn too much about the rules and skills, but deep down it should be a deeply competitive game that top players have to be excellent in both game skills and physical fitness.

High intensity cycling experience

The game is designed to motivate player to be physically active in order to win the game. The game mechanism itself will be the core drive of player's motivation. Player's speed, heart rate, distance and so on will actively affect the game while all the sports science and cold fitness numbers are hidden behind the game design which allows the player to reach their fitness goal just by having fun without thinking and understanding the science.

High Body agency

One advantage of this control system over traditional controller or keyboard is that it can create a more intuitive feeling of control and body agency, therefore the game should emphasize on that by creating high level of responsiveness in game controls that reflects player's physical movement and bio status, to achieve this, efforts have to be made on the following two aspects:

1. Technology: Signal transmission, accuracy, sensitivity, latency reduction, speed curve and so on.
2. Art: Animation, effects, sound design,

CORE GAME LOOP

The core game loop, also known as addictive loop, is the basic process that play will repeat throughout the game. it's the crux of the game experience. Make sure incentives and rewards are layered throughout this loop to ensure player retention is as high as possible.
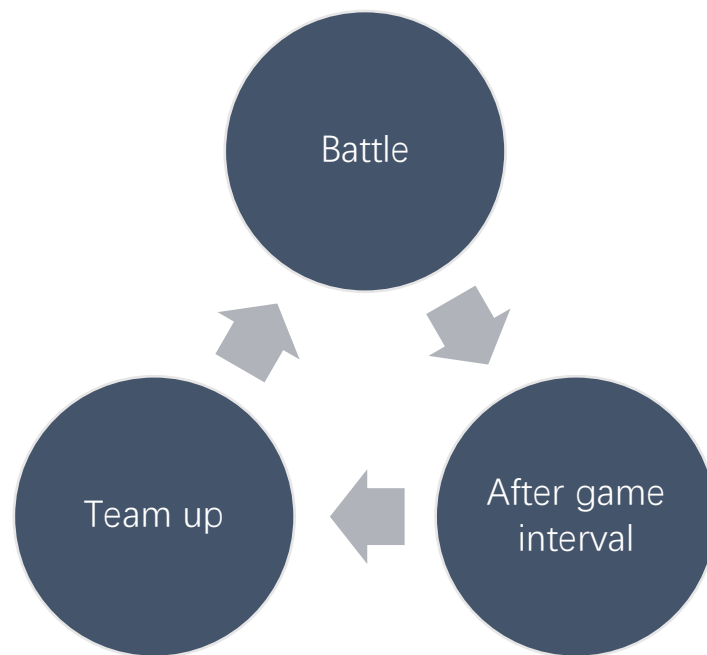
Description

The core game loop of spirit overflow is similar to other esports such as Dota2, CS: GO, Splatoon 2 or Overwatch. Player will start the loop by forming up a team, this includes match making process and hero-picking phase before the battle starts, then the player will go through a full battle with the team, after it ends, there will be short interval between each battle where it shows highlights, stats and rewards, in the meantime, the match making system will start automatically (if the player doesn't manually exit the queue) and going into the next loop.

Incentives

To ensure players will repeat the loop over and over again with the most motivation and the least friction and frustration, incentives and rewards should be layered throughout the loop. First of all, the most important part is the battle itself, which needs to be a compelling and rewarding experience that stands out on its own. To achieve this, the game features and mechanisms should be designed deeply based on the design pillars that were listed above, well executed, tested, and polished. Second, the after-game interval can also be a good place to put incentives and rewards system, such as game highlights (e.g. MVP camera), stats, EXP, currency, daily quests, etc. (details will be further explained in Full Features chapter)

MAGIC MOMENT

*Magic moment are **specific** points in gameplay that will delight or leave lasting impact on the*

player. The moment that they want to share with friends, scream, laugh, or wowed. Magic moment should align with the design pillars and shine early in the development.

1. When player controls the character for the first time and dash around the field. *(body agency)*

2. When the player accomplished an excellent teamwork (e.g. Use tank hero ultimate to block the enemy and the other two players secure the outpost) *(deep tactics)* *(hyper competitive)*

3. When player don't know who's winning after a very close and intense match of territory war and watching the progress bar filling up and surpasses the enemy team. *(hyper competitive)*

4. When the ultimate skill is fully charged, the player are in the same crazy status as the character (player: sweating, crazy heartrate, exhausted but can't stop pedaling; character: ultimate-ready particle effect on, blinking like crazy and super-fast.) *(body agency)*

5. When a 'noob' player being killed a 'million' times in the game but still wins in the end because he/she just keeps steeling territory. *(easy to play)*

FULL FEATURES

This chapter will dive deep into the detailed features of the game, including feature sets, mechanics, and game systems.

Basic mechanism

Basic mechanism are the features that are fundamental and universal in the game.

Movement
Player's pedaling and steering will control the speed and turning of the character. The basic speed, resistance, speed multiplier, turning angle and sensitivity vary from hero to hero.
Insert detailed file of speed/direction control here (codes, parameters, curve, sensitivity etc.)

Trial
When hero moves, there will be a **trial** left behind.

Territory
Trial can create **territories**.

A territory can be created by:
1. Single trial by player's own
2. Trial + ally territory
3. Multiple ally trails

Territories can be created at any places, including enemy territories (so player can steel enemy territory)

HP
Each hero has certain amount of HP (health point).

Damage
When enemy go across your **trial**, you will take damage that will
1. Erase your current **trail**,
2. Slows you down for a short period of time *(insert parameter here)*
3. Lose 1 HP

Kill
When hero's HP goes to 0 the hero will die, which will make him shortly absent from the battle.

Respawn
Hero will respawn at the respawn point after 12s, during this period, player's pedal will accelerate the respawn process, the faster player pedals the faster he can respawn the minimum respawn time can be reduced to 3s *(insert parameters here)*

Bio Ultimate skill
Each hero will have one ultimate skill *(will be listed in the Full Feature chapter when introducing heroes)* which is called Bio-ultimate skill, during the game, Bio-ultimate skill will

start charging at a low speed, but when connected to a smart watch that sends heart rate data, the charging will be accelerated depending on the heart rate. The charging speed will be divided into 4 tiers which represents light exercise, moderate exercise, vigorous exercise, and very vigorous exercise, the higher the faster. And as showing below, the charging speed is adaptive according to the age of the player.

When the bio ultimate skill is fully charged, the player can activate the ultimate by tapping on the button on the mobile phone.

Game modes

Spirit Overflow will have multiple game modes, and each game mode will have different maps. All of them will be listed below, but depending on our development plan and budget, we will choose to focus on a part of them first, the rest will be implemented later as significant game updates. *(will be further discussed and explained in development priority chapter)*

Game mode 1: Territory war

Territory war is the basic mode in this game.

Game rule: **within a 3-minutes 3v3 battle, the team who claims the most territory wins the battle. (like the turf war in Splatoon 2) in the last 30 sec all players get a speed boost of 15%.**

Territory war map: Neo Tokyo
(insert art and development document here)
Neo Tokyo is a basic square shape map, two teams respawn points are on each side of the map.
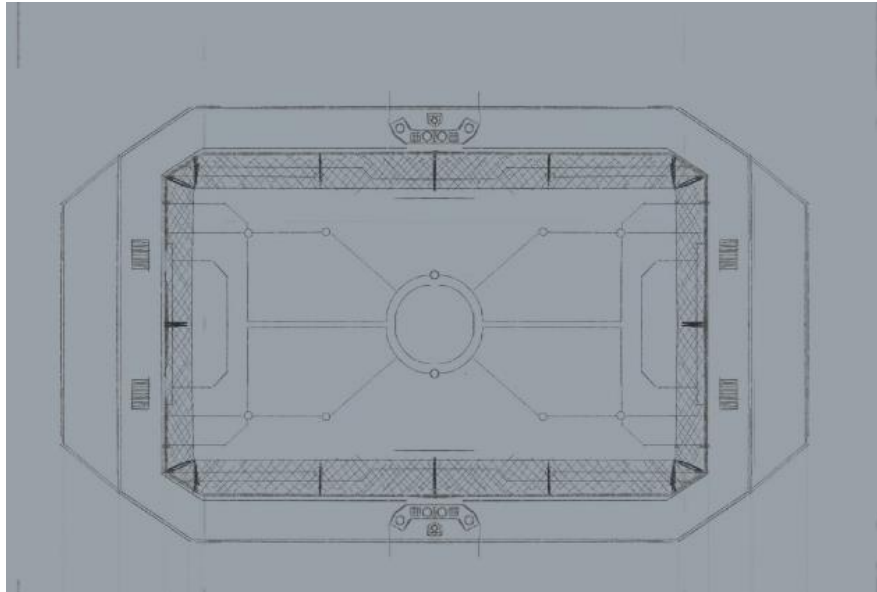
**This map has 3 special features listed below:**

a) Respawn area
There is a small area around the respawn point that the enemy team cannot enter (like an invisible wall for enemy)

b) Items
Items *(see item features)* will randomly appear in the game.

c) Outpost
Outpost is an important feature designed to induce conflict between the two team. Outpost is located at the center of the map (inside the big circle), player can control the out post by include the **whole** circle area inside their territory *(like the gif showing below)*. Team will lose control of outpost if the circle area is not fully covered with their territory.
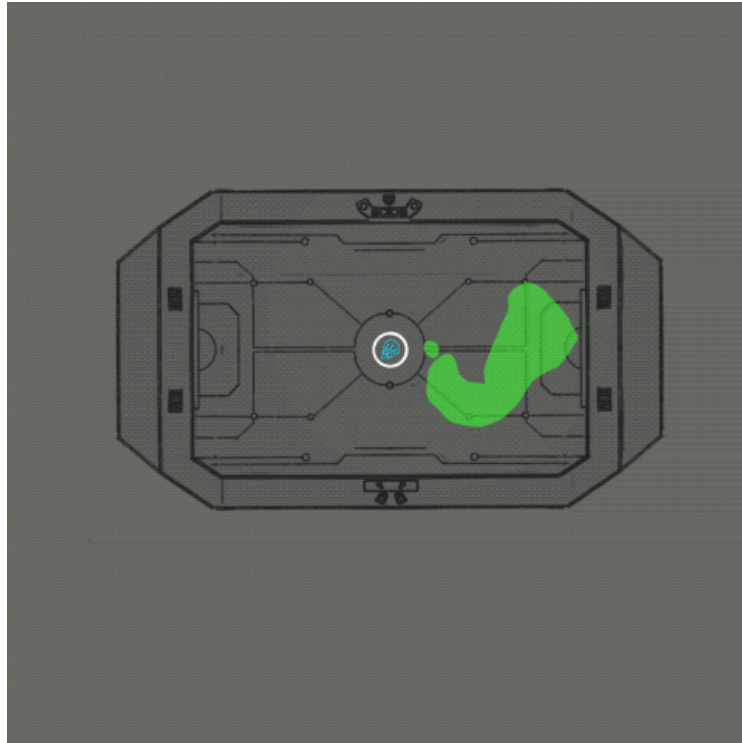
The player who controls the outpost will get a special effect which act on all the **territory of his team**. Outpost has two special effects *(showing in the chart below),* in each battle there will be **one** random outpost effect which will appear in the circle area after the first 30 second of each battle. In the first 30 seconds, the circle area is empty, teams can get control of the area, but no effect will be activated until the outpost icon appear at 30 second.

Outpost name	Effect	Icon
Sinking mud	When Enemy on your team's territory their resistance increases by 4	

Slippery floor	When allies on your team territory their resistance decreases by 1 and add speed multiplier by 12 %	

Game mode 2: Scuffle

In game mode Scuffle, each player is one team, the rest of the game rule is the same as territory war: in a 3-minute battle, the player who claims the most territory wins the battle.

Game mode 3: Escort

Escort is a game mode that within a 3-minute match, one team needs to escort a vehicle that carries payload to move from one side of the map to the other while the other team will try to stop it. The payload will only move when the ground under it is covered with territory, when it's covered with the escort team's territory, it will move towards the finishing side and vice versa.

Game mode 4: Dominance

Game mode dominance is a 3v3 battle where each team needs to control one or several small areas, when one team is in control of these areas, the progress of dominance will start charging, the first team that get 100% dominance of the areas will win.

Hero

In spirit overflow, each controllable character is called **hero**, each hero will have different attributes and ultimate skills so that different hero will have different play style and also plays different roles in a team depending on the characteristic.

Hero name	HP	Turning sensitivity	Basic speed	Acceleration	Description	Ultimate
Assassin	1	5	5	5	**High mobility, low hp, lethal assassin**	**Headshot:** In 5 second, speed boost by 12%, and get instant kill ability.
Tank	6	2	2	1	**Tanky, slow strategic (can divide the battel field)**	**Iron barrier:** In 10 second, speed boost by 50%, immune all negative effects, trial becomes an invulnerable wall that enemy cannot cut or go through.
Healer	4	3	2	2	**New player friendly, easy healer**	**Savior:** Instant heal all allies to full HP
D	2	3	3	4	**Assassin but less lethal and less risky**	**Shadow warrior:** turn into invisible (to enemy) status for 20s. New territory formed during this period will still show but trails and hero will disappear. When taking damage, will shortly become visible for 2 seconds.
E	3	4	3	2	**Sneaky "disgusting" hero, good for small area dogfights and defending**	**Magnetic trap:** can place 3 magnetic traps on any places of the map. The traps are invisible on ally territory. When enemy is within the radius of the trap, the trap will be triggered, and the enemy will be suck into the center of the trap and kept still for 2s. the trap cannot trap **tank** when he is on **iron barrier** status (will trigger but no effect)
F	3	3	3	3	**New player friendly, balanced, easy. its ultimate can generate big territory in a short time which can be a**	**Air strike:** hero calling air strike, after 2s, a series of missiles will hit the ground randomly around the hero, and when missile explode, it will generate a territory at x radius, enemy or enemy trial that gets hit by the missile will get damage(like normal

					key to win in late game	attack), the air strike will last 10 s, 7 missiles in total

Insert development document

Items

Items are powerups that individual player can get during the game, the frequency of appearance and location vary in different game modes and maps. When the player gets an item, he can activate it by tapping on the item icon on the mobile phone. If player gets a new item before activating the previous one, it will be replaced by the new one, player can only get one item at a time.

Name	Effect	
Speed boost	12% speed boost	
Health pack	Heal 1 hp	

Experience (core user flow)

Here is a simple description related to the core experience design that focuses on explaining why those design decisions and compromises are made. More detailed user flow/wire frame will be described in the UI/UX document (insert here).

In Spirit Overflow, we have been trying to figure out some key user experience design that create a balance between a good competitive game experience and an efficient workout. For example, the length of each battle was a problem. A minimum bike workout requires 30 min cycling, but obviously it doesn't fit for our game, if the time for each battle is too long, it hinders the level of competition unless the game complexity is enough to hold the competition level (like MOBA or RTS). We then tried to make each game 10 min and a complete match is a best of three so that it can secure the minimum time of one full match is 30 min. But after testing, I feel 10 min is still too long for our game and the next two games are just getting more tedious as the time goes. After some research on games that has similar level of complexity and competition (Splatoon2, Brawl Stars, Clash Royal), I believe around 3-5 minutes is the appropriate length for one match. (of course, needs further testing and adjusting).

So, if each battle is 3 minutes, we need to find other ways to keep the whole game experience also effective as a workout. The idea is to design the whole game experience as **a series of** intense, fast-paced, addictive short battels and make the player continue one after another without a long time of physical inactivity.

The user flow after a battle ends goes like this:
When each battel ends, there are 5 sec for showing game result, and 5 seconds to show the stats and rewards, during these 10 seconds, if nobody quits the game, the next game will start automatically, if there are player quit, the match making will start automatically(while waiting for more players, plays the game highlights of last game) as soon as there is 6 players, the game will start.

battle	Result page	Stats/reward	matchmaking	Next battle

Incentive systems

Treasure
In the future there will be treasures that contain in-game items (cosmetics that does not affect gameplay). Player can get treasure by purchasing at store, finishing daily quest, and others.

Daily quest system
Daily quest is a system that can give player objectives and goals in a regular manner. There are different kinds of daily quest that can motivate players in different aspects. One player will have 5 daily quests each day and it will refresh every day at 00:00. Each daily quest will have 3 levels of accomplishment, better rewards will be given to better levels.

name	☆	☆☆	☆☆☆
Diligent	Finish 3 battles	Finish 5 battles	Finish 10 battles
Win streak	3 streaks	5 streaks	10 streaks
Hero A	Use hero A to win 3 battles	Use hero A to win 5 battles	Use hero A to win 10 battles
Kill	Kill 3 enemies	Kill 5 enemies	Kill 10 enemies
Heal	Heal 5 hp	Heal 10 HP	Heal 15HP
...	...	...	...

Level system

Level represents player's time commitment into this game, it's not related to player's skill, normally in other games player needs to gain experience in order to level up, in Spirit Overflow, the level is tied to the accumulated **milage** form the bike trainer (only counts when player is in the game). levels and mileage point show a non-linear relationship, the higher the level, the more distance the player needs to accomplish to get next level *(insert function here)*.

Players can gain milage points by pedaling at **any time** in the game. For example, milage points gained in a **battle** will be shown in the stats screen and add to the milage point bar after the game ends. When player is outside the battle, no matter what page the player is in (intervals between battles, matchmaking, browsing through profile etc.), as long as the player pedals, the milage point will add to the bar in real time with visual and sound effect. This is to motivate the player to not stop pedaling and keep physically active even if they are not in a battle. So that they are more likely to keep pedaling between each battle.

Level related Rewards:

Heroes:
New player will be given 3 controllable heroes at the beginning, the rest of the heroes will be unlocked as the player level up.

Treasures
Treasures can be granted at certain levels

Battle pass
If we sell battle pass in the future, the battle pass level can be linked with milage points, as a parallel progress as level

Achievements
Achievements of milestones (xxx miles) can be granted at certain milestones of milage.

Currency system

Currency in Spirit overflow is called K coin. Player can get the coins by winning games, finishing daily quests, opening treasures, and pedaling. The K represents calories, just like milage, player can get K coins **any time** in the game by pedaling. For example, k coins gained in a **battle** will be shown in the stats screen (wining the game will have bonus coins) and add to the total coins after the game ends. When player is outside the battle, no matter what page the player is in (intervals between battles, matchmaking, browsing through profile etc.), as long as the player pedals, the K coins will add to the total coins in real time with visual and sound effect.

Rank system

In multiplayers, player can choose to modes to play. One is competitive play, in which the win or lose of each battle will affect the MMR (matchmaking rating) of the player, when player wins, they gain mmr and vice versa. MMR is the direct representation of player skills. Player can also choose arcade mode where the result of each battles do not affect MMR.

DEVELOPMENT PRIORITY

We are not going to implement all features above at once, most of them will be added to the game as significant updates later. But we need to figure out what would be the minimum viable product for a beta launch that can deliver the core gameplay with the resources we have.

Top priority game features:

Implement basic mechanism
Polish game control (improve responsiveness, reduce latency)
Complete territory war game modes
Implement more than 3 heroes
Achieve multiplayer