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GAME DESIGN DOCUMENT

17/05/2022 - V 1.3.3

STARSKEEPER

OVERVIEW

CHARACTERS

CAMERAS

CONTROLS

LEVEL DESIGN

MENUS

UI

GAME FLOW

GAME FEEL

EXTRA

OVERVIEW

THE UNIVERSE NEEDS TWO HEROES!

- **Genre**
  - Rail-shooter

- **Target**
  - Rail-shooter fans
  - Cooperative players

- **Platform**
  - PS4

- **Game mode**
  - 2 players (local coop)

A 100% CO-OP RAIL-SHOOTER GAME

You stand as a **team**.

Collaborate with your mate to progress in a space full of **enemies** and **environmental challenges.**

Be **synchronized** to improve your effectiveness and win more and more **scoring points**.

Use your **special union abilities** to vanquish (with style!) all your opponents.

UNIVERSE

SYNOPSIS

Players control two drones, **J-1L** and **V-4L**. They are awakened by an **emergency call** coming from the C2 Terraforming Station. An **anomaly** - an invasive **coral** species - emerged and took possession of the place, causing trouble in machines. It alters their **behavior**, leading them to acquire their own will and personality, and **ignore the purpose** they were created for.

PLOT

By fighting infested enemies - their former allies -, the protagonists are progressively **altered** in turn.

When they reach the Motherbase to come back to their hangar, they are detected as hostile units that must be eliminated. J-1L and V-4L have no choice but to **turn against** the Motherbase in order to **survive** - and finally be free.

ISART DIGITAL

UNIVERSE

CHARACTERS EVOLUTION

The characters' behaviour evolve during the game. Their consciousness' emergence particularly appears in the way they are talking, through **dialogues**.

In part **1 and 2**, they use a neutral and litigious tone. **No difference** is noticeable between them.

In **part 3**, due to their exposition to the corals and infested enemies, they start to **express themselves**. They stay focused on their primary objective - cleaning the station - but they employ more familiar and natural tones.

In **part 4**, the characters are detected as hostiles. They rise up against the Motherbase because they have no choice but also to obtain their liberty. They now **act on their own**.

CHARACTERS
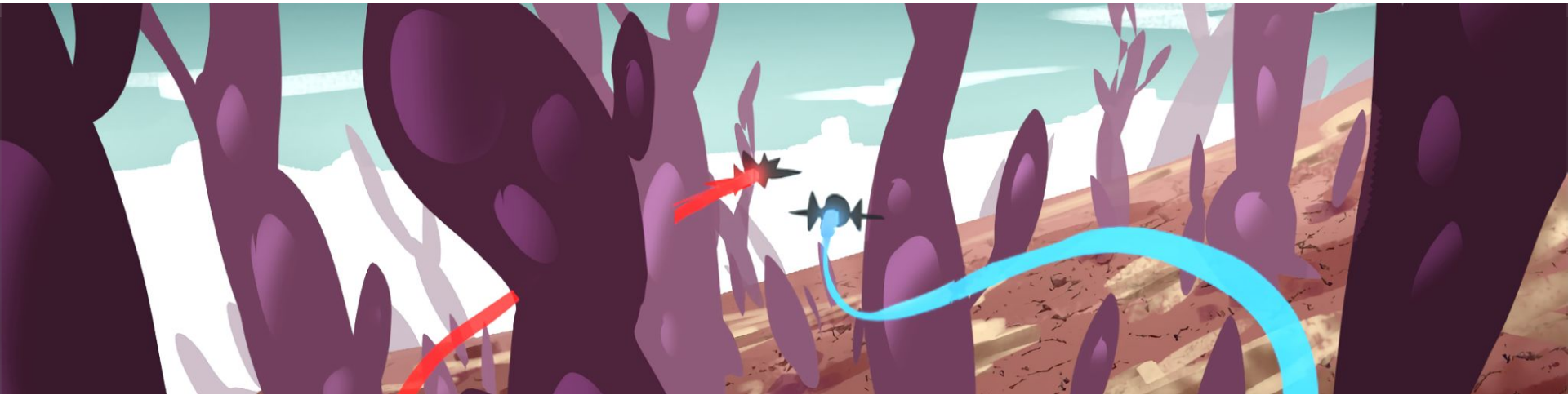
CHARACTERS | SHIPS

MOVE

The players' **forward movement** in the game is **pre-programmed**. In-engine, it is driven by a "Spline" path.

The players have **no control** over it: It is similar to a **roller-coaster** experience. The speed along this path changes at scripted events. Many events in game are triggered when the player screen reaches specific points on this path.

The players, however, control their **lateral movement on screen**.
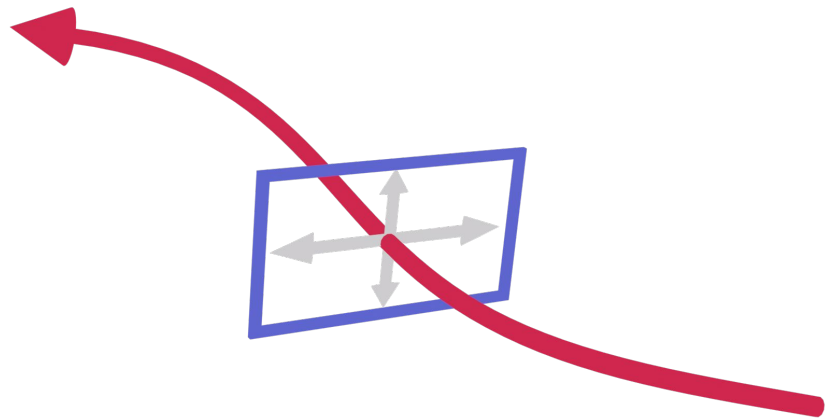
In red, the player path (not player-controlled).
In blue, the game screen.
In white, the axes along which the ships move laterally (player-controlled)

CHARACTERS | SHIPS

MOVE

The ships' lateral speed ranges from **0** to **1250** units per second.

- Because of perspective, ships are slightly offset from the center of the cursor. This allows for easier aiming.
- The ships are always on the **same plane**, and players cannot control their ship's depth on screen.
- The ships are bound to the screen limits with **a slight margin** to account for perspective.
- The ships' pitch and yaw angle are automatically adjusted to point towards the cursor.

- Players repel each other when they collide, with an **acceleration force of 200 units**.

CHARACTERS | SHIPS

MOVE

The evolution of the ship's speed is
dependent on the joystick's inclination as
shown on this curve :

1250 u/s

0 u/s

Ship's speed

Rest position

Fully inclined

Joystick inclination
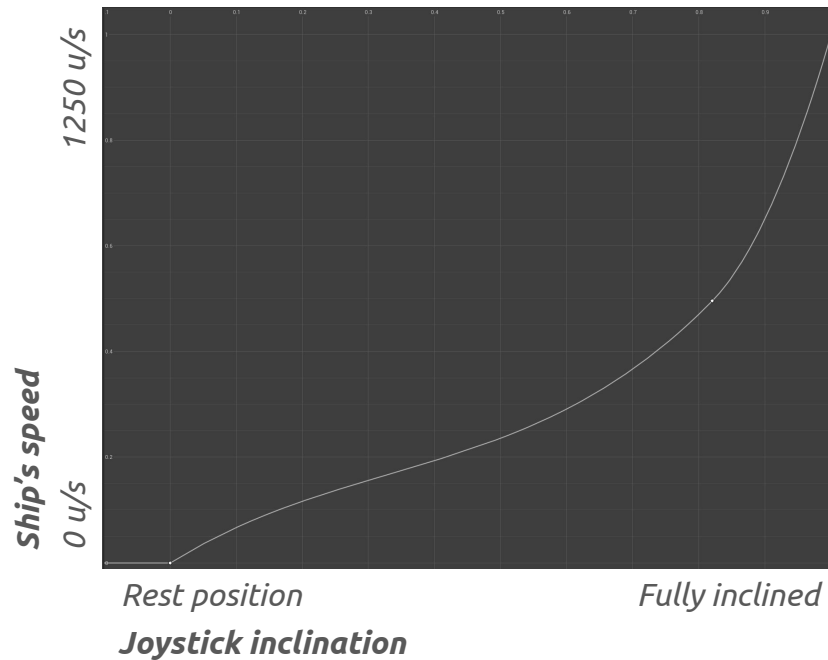
CHARACTERS | SHIPS

BARREL ROLL

Players can perform a **barrel roll** by pressing the L1/R1 controls.

- The barrel roll makes the player **invincible for 0.3 seconds**.

- The barrel roll increases the ship's speed by **5 times** its value for **0.3 seconds**.

In-game barrel roll

CHARACTERS | SHIPS

SHOT

Players can perform simple shots by pressing the Cross button.

- If the player holds the button, the ship fires continuously.
- The rate of fire (RoF) for the simple shot is **6 shots per second**.
- Each simple shot deals **8 damage**.
- If the player spams the button faster than the simple shoot RoF, they are able to shoot **10% faster**.
- Hit detection is done in *hitscan*. Objects in the reticle are instantly hit when the button is pressed.
- Bullet VFX are shot in the direction of the target. If there is no target, they are shot in the approximate direction of the reticle.

CHARACTERS | SHIPS

SYNCHRO-LINK

If both players stay close enough, a **link** is formed between them.

- The players need to be **750 units of distance close** for the link to form.
- Both players are **powered up** while the link is active.
  - Their damage is powered up by **a multiplier of 25%**.
  - Their rate of fire is powered up by **a multiplier of 50%**.

If the players stay more than **750 units of distance** away from each other for **0.2 seconds**, the link is broken.

CHARACTERS | SHIPS

HEALTH AND REVIVE

Each player character's ship has a health pool of **5 health points**.

- If a player character's health pool reaches **1**, they start leaking smoke as an indicator.
- If a player character's health pool reaches **0**, their ship is heavily damaged.
- While heavily damaged, the following applies :
  - The ship cannot shoot.
  - The ship cannot barrel roll.
  - The ship's **movement speed is reduced by 70%.**

- If one player stays next to the heavily damaged ship for **3 seconds** in a row, the damaged ship is **revived** at **3 health points** and is **invincible** for **1,2 seconds**
- If the player moves away before reviving the heavily damaged ship, the revive timer is reset to 0.
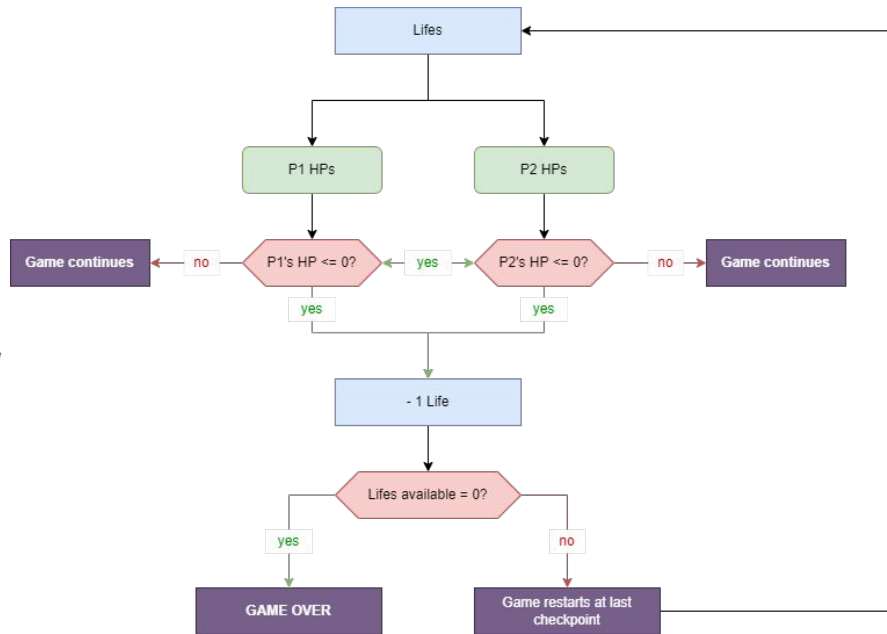
CHARACTERS | SHIPS

LIVES

Both players have **4 lives** in common. These lives are consumed when either:
- **Both ships** reach 0 HP.
- The fused ship reaches 0 HP.

They then restart at the last checkpoint they reached.
If players lose all of their lives, the game is **over**. They have to restart the game from the beginning.

HPs and Lives loop (2 ships)

CHARACTERS | FUSION

FUSION

Sometimes during the game and in a **scripted way**, the player character's ships will **fuse** together.

When fused, one player controls the **ship's movement**, while the other player controls the ship's **reticle** and **shooting**. The fused ship moves at **a speed of 1600 units per second.**

The fused players' weapon has a **magazine**. If emptied, the players switch roles automatically, and the weapon's magazine is reloaded.

- The magazine has **80 ammo**.
- When the players switch position, **time slows down to 20%** of its usual speed for **1 second**.
- The ship and reticle change color to match their respective controlling player's color.
- A switch text notification appears on the screen.

CHARACTERS | FUSION

SUPER SHOT

The super shot replaces the basic shot for the shooter player's inputs.

- The shooter player can freely move their reticle. Bullets are shot from the ship towards the reticle.
- The **Rate of Fire is 10 shots per second**.
- The **bullet damage is 10**.
- Each bullet costs 1 ammo.

CHARACTERS

CHECKPOINTS

At specific points in the game, players trigger checkpoints, allowing them to **save their level progression.**

- Players position along the rail.
- Players state.
- Enemies state (dead or alive).
- Score.

When both players are heavily damaged at the same time, they restart from the **last** checkpoint at full health. The ships' positions are reset on screen.

CHECKPOINT TRANSITION

When both player characters are destroyed, the following happens :

- The player characters are destroyed in an explosion.
- The camera stops moving and the screen fades to black over 3 seconds.
- The game displays the players' remaining lives.
- The game loads from the last checkpoint and the screen fades back to normal.

CHARACTERS | ENEMIES

CHARACTERISTICS

All enemies can be destroyed by the players. When destroyed, they explode.

The Rate of Fire of enemy weapons is not linked to the enemies but to the **patterns** they follow.

All bullets fired move at a constant speed of **55 units per second**.

There are two types of weapons:
- **Single-target weapons:** Target one of the two players at random for each shot fired.
- **Area of Effect weapons:** Target a section of the screen (Circular or linear). This point is either scripted or random.
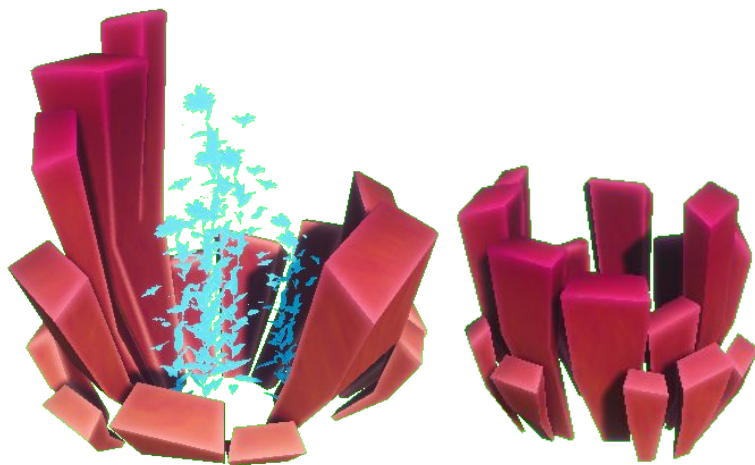
CHARACTERS | ENEMIES

CORAL

Health : 30
Weapon : N/A
Score : 80

Corals are static, do not attack, and can be destroyed by the players.

They are designed to be fully optional, non-dangerous **score bonuses** for players that manage to quickly destroy all enemies.

These coral growths have a strange effect on whatever they're stuck to.

CHARACTERS | ENEMIES

CREEPER

Health : 30
Weapon : N/A
Score : 80

Creepers are corals that obstruct the players' path. Like other corals, they can be destroyed and give score points. However, they **damage players on collision**.

Creepers are an obstacle that can be overcome either by shooting them down or by dodging at the right time.
They add light environmental challenge that asks for some thinking on the player's part.

Larger corals that will block the players' path. Thankfully, they can be destroyed for a shower of score points!

CHARACTERS | ENEMIES

THE PACIFIC (G-C2 - GUARD UNIT)

Health : 15
Weapon : N/A
Score : 50

The pacifics are defined by **simple patterns,** and often pass by in the background.

They are moving targets whose only purpose is to give score to the players.

A drone unit charged with supervision of the Terraforming Station.

CHARACTERS | ENEMIES

THE PACIFIC 2 (T-C2 - TRANSPORT UNIT)

Health : 15
Weapon : N/A
Score : 1500

The pacifics 2 are defined by **simple but fast patterns,** and often pass by in the background.

They are **very valuable** moving targets that force the players to instantly react and **disrupt** their current strategy.

A flying drone able to move equipment and tools throughout the Terraforming Station.

CHARACTERS | ENEMIES

THE MINION (D-C2 – DEFEND UNIT)

Health : 30
Weapon : single-target bullets.
Score : 100

The minions are defined by **simple patterns.**

They are **easy to destroy** and exist to apply a very slight but somewhat constant pressure to the players.

Fast drone equipped with weapons to protect the Terraforming Station.

CHARACTERS | ENEMIES

THE MINIBOSS (F-C2 - FIGHT UNIT)

Health : 800
Weapon : single-target bullets.
Score : 2000

The miniboss has a complex pattern and shoots faster than regular minions : it shoots 5 projectiles at 0.1 second intervals.

He is a **memorable encounter** that enforces a high challenge level, especially for dodging.

Augmented drone designed for aerial combat. No wildlife is a match for its gunpower.
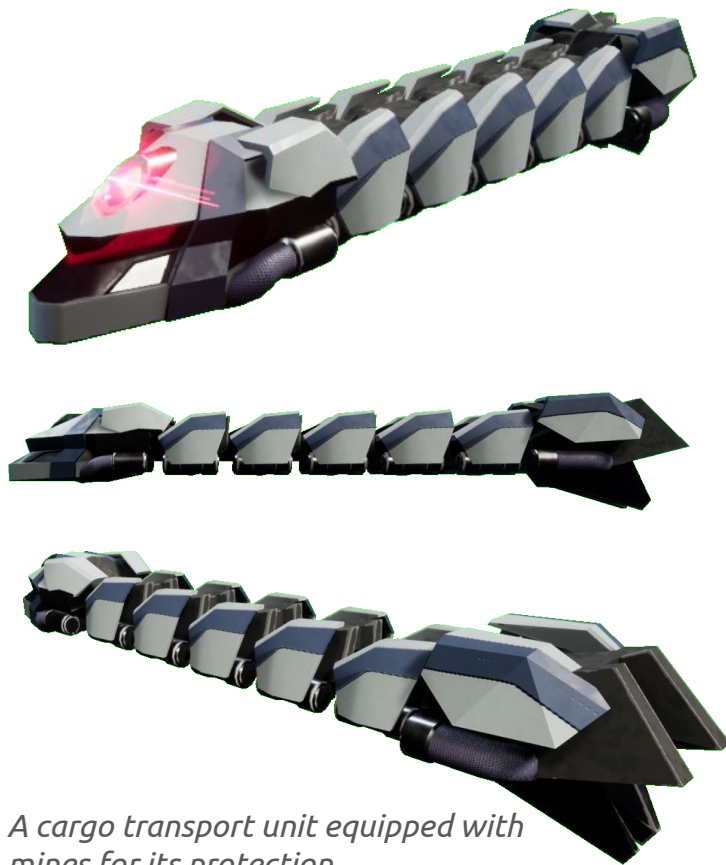
CHARACTERS | ENEMIES

THE MINIBOSS - BOSS FIGHT VERSION (F-C2 - FIGHT UNIT)

Health : 600
Weapon : single-target bullets.
Score : 0

This version of the miniboss appears during the final boss battle.

It stills represents the same threat but is **slightly more fragile** to balance the difficulty when battling the **miniboss** and the **Motherbase at the same time**.

Augmented drone designed for aerial combat. No wildlife is a match for its gunpower.

CHARACTERS | ENEMIES

THE SNAKE (C-C2 - CARGO UNIT)

Health (head): 150
Health (body part): 20
Score: 200 per body part.

The snake will be destroyed in a chain explosion if either its head or all of its body parts are destroyed.

During the chain explosion, every remaining body part explodes sequentially, giving more score each time (increasing by 5% of the base score for each part that already exploded).

A cargo transport unit equipped with mines for its protection.

CHARACTERS | ENEMIES

SNAKE MINES

Snake mines are thrown by snakes at scripted moments in the game.
They aim at either a random or scripted point on the player screen.

They travel from their spawn point to their explosion point in **1.8 seconds**. They then explode in a **radius of 250 units**.

They deal 1 damage to all players in their explosion radius.

A UI warning appears from the moment they spawn that indicates where they're going to explode.

WARNING

CHARACTERS | ENEMIES

THE TURRET (S-C2 SENTINEL UNIT)

Health: 50
Weapon: single-target bullets.
Score: 100

The turret is an immobile enemy.
A trigger placed on the player's path enables or disables the turret's ability to aim at the player character and shoot.

When enabled, turrets shoot **1 bullets every X second,** X being **1,5 seconds, 2 seconds or 3 seconds**. They change targets randomly every **2 to 4 seconds** (random).

A powerful but fragile chain-shooting unit. Defend weak spots of the station.

CHARACTERS | ENEMIES

MOTHERBASE LASER

Lasers are fired by the Motherbase at scripted moments in the game.
They aim at either a random or scripted point on the player screen.

There are two types of lasers:

- When the **Motherbase is not visible,** from the **side**. A preview of the laser is displayed on screen. **2 seconds** later the laser is fired on the screen as a **beam 250 units wide** passing through the entire screen. It deals **1 damage**.

CHARACTERS │ ENEMIES

MOTHERBASE LASER

- When the **Motherbase is visible,** from the front. A UI warning appears on screen. **2 seconds** later the laser is fired at this point of the screen and deals **1 damage** in a **radius of 250 units**.

CHARACTERS | ENEMIES

THE MOTHERBASE (M-C2 - C2 TERRAFORMING STATION MOTHERBASE)

Health: 2500
Core health: 80

The Motherbase is protected by a **force shield**. Players have to **deactivate both of its cores** in order to deplete the shield from its energy. Each core reactivates itself in **3 seconds** if the other is still activated. The shield and both its cores reactivate themselves at specific health points milestones **(2100 - 1700 -1275)**. Players can only damage the Motherbase when its shield is depleted.

The Motherbase has **multiple phases** depending on how many health points it has left. Its behaviour changes according to its phase.

CHARACTERS | ENEMIES

THE MOTHERBASE (M-C2 - C2 TERRAFORMING STATION MOTHERBASE)

Phase 1: 2500 to 1700 health points

The Motherbase **regularly spawns minion waves** and **fires a laser every 5 seconds**. It aims at controlled random points of the screen following this pattern:
- Can not aim 2 times in a row at the **same quarter** of the screen.
- Can not aim more than **3 consecutive times** at the **same side** of the screen (top/bottom or left/right)

While its two cores are deactivated, it stops firing lasers.

Phase 2: 1700 to 850 health points

Same behaviour as phase 1, but stronger:
- **Spawns a Miniboss** instead of minions
- Fires a laser every **3.5 seconds**.

Phase 3: less than 850 health points

The Motherbase is unleashed:
- Its cores do **not reactivate**
- Fires a laser
  - **every 2 seconds**
  - Closer to the **center**
  - No more than **2 consecutive times** at the same side

SOUND LIST

[Link to the Soundlist Document](#)

Restriction	Description	Prio	Asset Name	LP	Progress	Bus
			SHIELDS			
no var	Explosion du shield de la motherbase chaque fois qu'on pète les core	High	Motherbase_Shield_Explosion	☐	DONE COULD BE BETTER	BIG
Max 1 seconde	Regeneration du Shield de la MB	High	Motherbase_Shield_Regenerate	☐	DONE COULD BE BETTER	BIG
no var	Ambiance SHield	Medium	Motherbase_Shield_Presence	☑	DONE COULD BE BETTER	LOW
no var	Shockwave/VFX d'impact quand on tire sur le shield	High	Motherbase_Shield_Impact	☐	DONE COULD BE BETTER	LOW
no var	Voir Motherbase Shield Explo	Low	Core_Shield_Explosion	☐	DONE	MID
no var	Explosion du core (c'est plus une désactivation, voir un downer electrique, ...)	Medium	Core_Explosion	☐	DONE	MID
no var	Reactivation du core/des cores,	Low	Core_Reactivate	☐	DONE	MID
no var	Rise Up/Tic-Tac/Bip-Bip pour signaler l'arrivée de la réactivation des cores	Medium	Core_Cooldown	☐	DONE	MID
			AMBIANCES			
1-2 var (random seek/pitch wwise)		Low	Force_Field_Presence	☑	DONE	LOW
C'est plus ou moins des varias du même truc			**LASER**			
no var	Premier Laser de la Motherbase, can be huge	Medium	Motherbase_Laser_FirstOne	☐	DONE COULD BE BETTER	ENH
2-3 var	Laser de la motherbase qui viennent des côtés	High	Motherbase_Laser_Side	☐	DONE COULD BE BETTER	BIG
same ^	Laser de la Motherbase pendant le boss fight (si t'as envie de le faire slightly diff)	Medium	Motherbase_Laser_EndGame	☐	DONE COULD BE BETTER	BIG
C'est plus ou moins des varias du même truc			**LASER**			
same ^	Alarm	Medium	Motherbase_Alarm	☐	DONE COULD BE BETTER	LOW

Sound list document preview

CAMERAS

CAMERA

ONE CAMERA FOR TWO PLAYERS

There's two players, but a single camera:
no split-screen in our game!

Two different behaviours are used:

- The **basic** camera

- The **cinematic** camera

CAMERA

BASIC CAMERA

The camera is **rail-bound** for the whole game. It is more zoomed out than usual rail-shooter cameras to account for the two players.
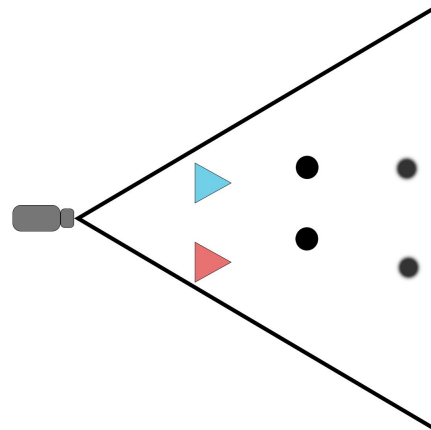
FoV: **90°**

Distance to players: **1200 units**

Basic camera

CAMERA

DEPTH OF FIELD

Depth of field is adjusted to a **medium distance** with a **low focal length**.

This will allow the nearby player ships and the shootable enemies to be in focus. Far-away enemies that can't be shot yet will be slightly out of focus.

CAMERA

PERSPECTIVE

The camera is not orthographic but in **perspective**, meaning that the ships' position affects their angle because of the perspective effect centered on the screen.

CAMERA

CINEMATIC CAMERA

To accentuate particular moments in which we want to push players to take a look at environmental narration or specific events, the camera can take different **angles** and **distance**.

This camera is triggered at **scripted** moments in the game and is driven by a sequencer.

Camera in cinematic mode

CAMERA | CINEMATIC

INTRODUCTION CINEMATIC
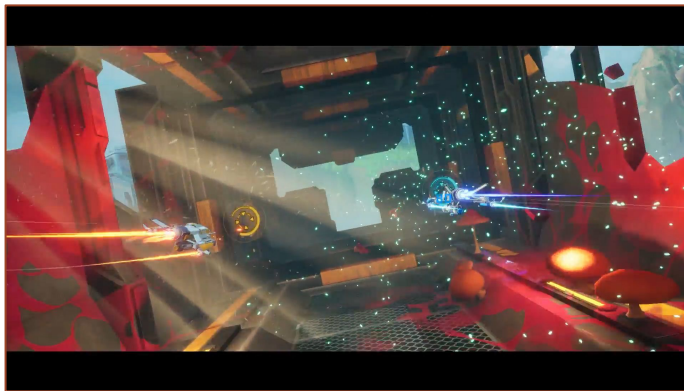
- Travelling camera shot similar to gameplay for smooth transition.
- Players still control their characters.
- Builds anticipation for the cutscene.

- Travelling low-angle shot that emphasizes the motherbase's size.
- Players still control their characters.

CAMERA | CINEMATIC

INTRODUCTION CINEMATIC

J1-L, V4-R : bienvenue dans la station de terraformation C2.

- Panorama travelling shot shows a wide sweep of the environment (meant to inspire awe).
- The logo, placed in 3D in the environment, slowly fades in.

43

CAMERA | CINEMATIC

FUSION CINEMATIC

- Travelling camera shot similar to gameplay for smooth transition.
- Players lose control of their ships.
- The two characters play an animation to fuse together.

- The camera transitions back to the gameplay camera smoothly.
- Players regain control, however they're now in "Fused mode".

CAMERA | CINEMATIC

UNFUSE CINEMATIC

- Static camera shot. The motherbase is above the players to emphasize its superiority.
- The players lose control of their ship.

CAMERA | CINEMATIC

UNFUSE CINEMATIC

- A "laser warning" appears at the player's location and the motherbase starts aiming at the players.
- The players still don't have control of their ship.

- The players regain control of their ships as they're unfused by the laser.
- Camera progressively starts moving forward again.

CAMERA | CINEMATIC

CORES DEACTIVATED CINEMATICS

Security breach detected: primary shield core exposed.

Security breach detected: secondary shield core exposed.

- There are two short cinematics (one for each core).
- Horizontal travelling camera shot on top of the Motherbase.
- It shows the explosion of each core shield and is accompanied with dialogue.
- Players are invulnerable during these two sequences. They cannot move until the end of the cinematic.

CAMERA | CINEMATIC

MOTHERBASE BATTLE START CINEMATIC
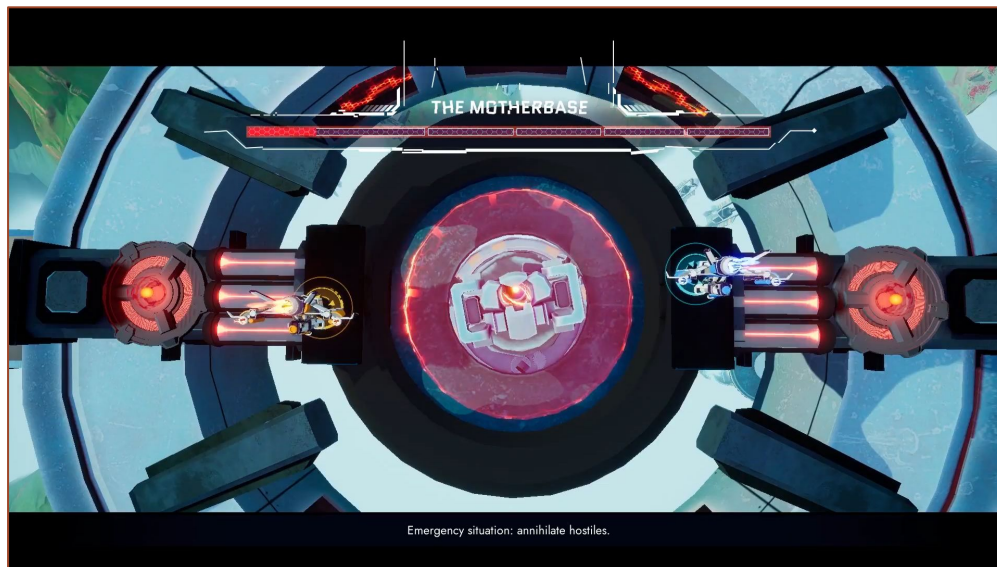
- When players reach top of the Motherbase, they loose control and have been replaced on the screen
- Motherbase head approaches with a dialogue; Motherbase's lifebar appears, progressively charging.

CAMERA | CINEMATIC

VICTORY ENDGAME CINEMATIC
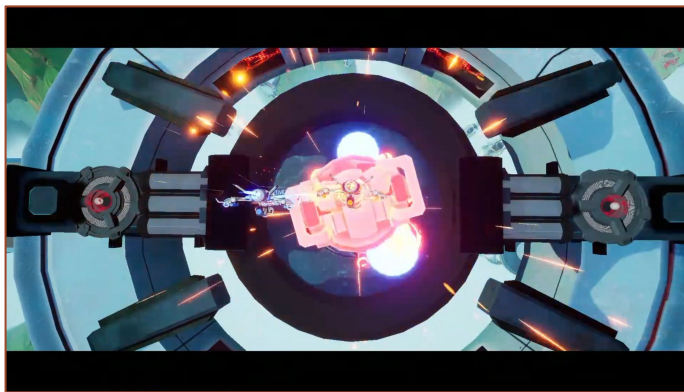
- The camera stays behind the ships.
- The motherbase shakes and starts exploding in anticipation.

- Travelling camera shot similar to gameplay follows as the players dive away from the motherbase.
- The entire world takes a red tint to further anticipate the explosion.
- The players stay in control of their ships.

CAMERA | CINEMATIC

VICTORY ENDGAME CINEMATIC
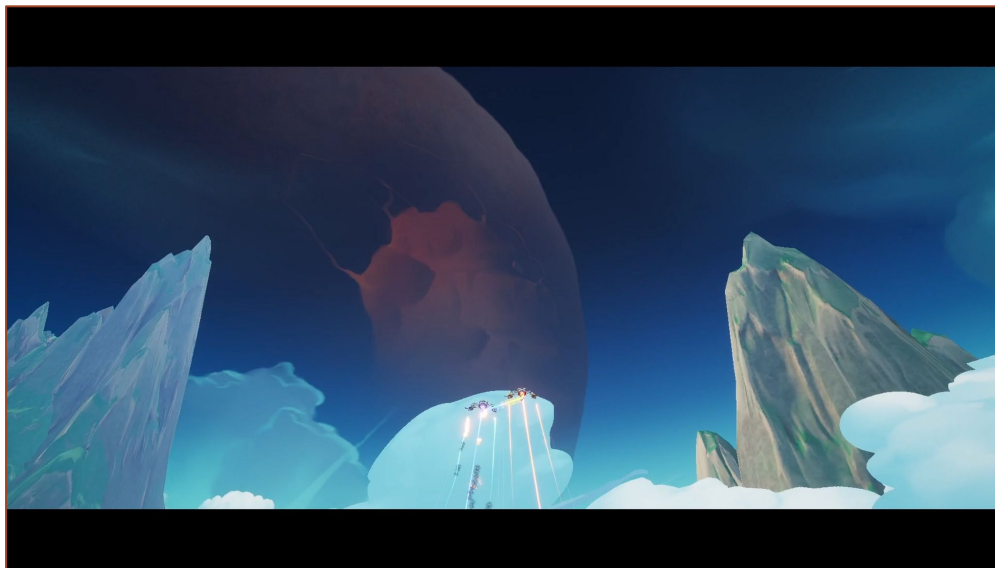
- After a white explosion flash, the camera becomes static.
- The camera rotates to follow the ships ascension towards the sky until they disappear.

CAMERA

SCREENSHAKE

Screen shakes will be important to emphasize the impact of certain actions.

Light screenshakes are triggered by:
- Speed changes
- Environmental triggers
- Near-screen enemy explosions.

Medium screenshakes are triggered by:
- Player damage.
- Fusion player-switch.
- Large enemies passing near the screen.

Hard screenshakes are triggered by:
- Player death.
- Boss death.
- Player revive.
- Fusion animation
- Motherbase laser

CONTROLS

CONTROLS | IN GAME

Solo

Barrel Roll — L2 R2

Pause — OPTIONS

Move — L

Shoot — ✕

Fusion

L2 R2 — Barrel Roll

OPTIONS — Pause

✕ — Super Shoot

L — Move
Aim

◆ Both Players   ◆ Driver   ◆ Shooter

CONTROLS | MENUS

Cancel / back

Validate / enter

Navigate
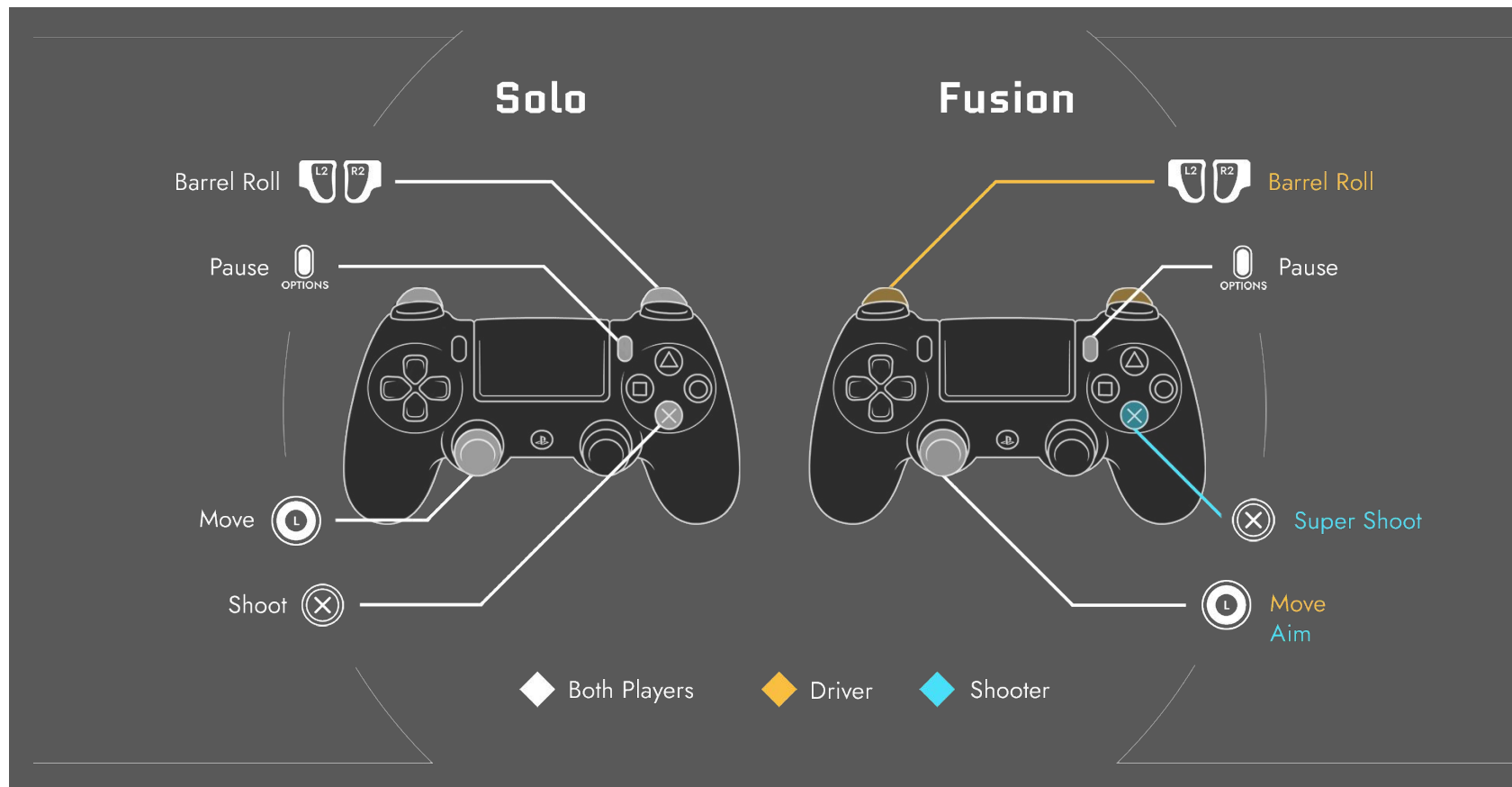
First player

CONTROLS | HAPTICS

The PS4 gamepad has multiple **haptics motors**. We use them to great effect to emphasize most of the player actions and convey some of the ships feel directly to the players.

Haptics currently in game:
- **Barrel roll:** Strength 0.05, Length 0.1s
- **Shoot:** Strength 0.05, Length 0.05s
- **Bump player:** Strength 5, Length 0.1s
- **Die:** Strength 7, Length 1s.

Additionally, some **in-game events** cause **scripted haptic feedbacks**. For instance, snakes cause slight haptics rumbling when close to the camera. The motherbase laser shooting causes a rapid haptics shock.

LEVEL DESIGN
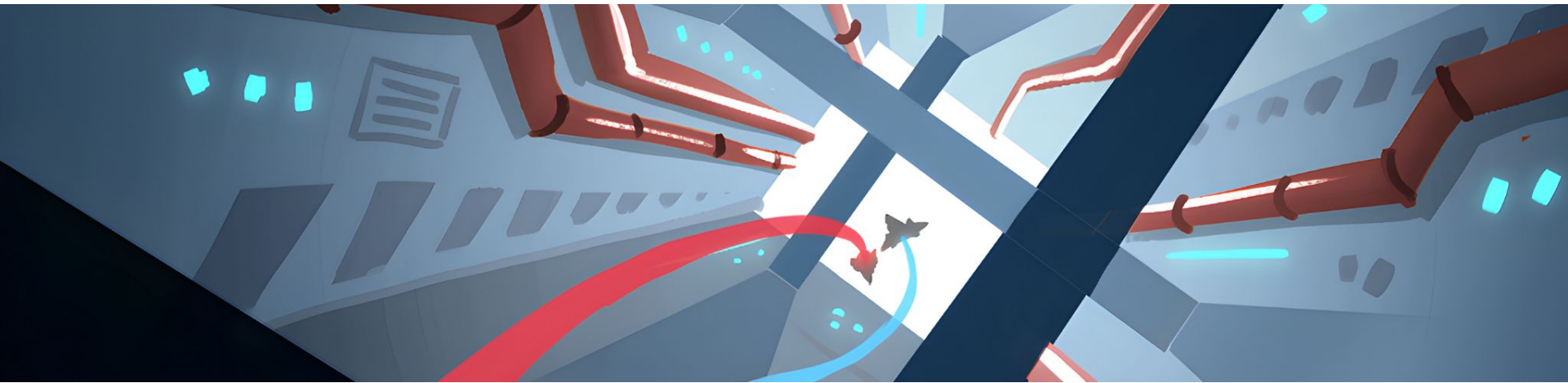
LEVEL DESIGN | BRICKS

HOLO-SHIP

At scripted moments of the game, we want the players to be at **specific points** of the screen. For that, we use holo-ships. We place them at the points we want the players to be. When a player collides with it, a holo-ship turns green. If this player stops colliding with it, it turns white again.

After **1,25 consecutive seconds** colliding with a holo-ship, a ship stops listening to player's inputs until we decide to turn it on again.
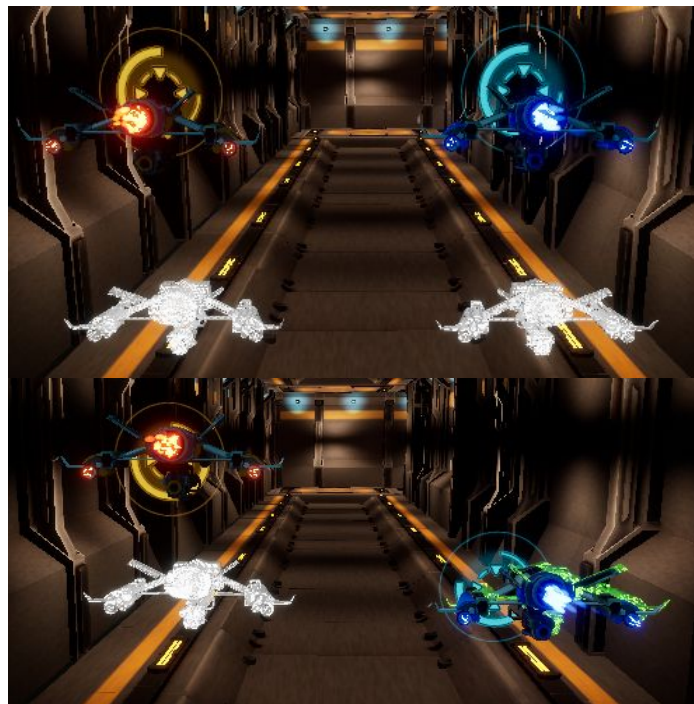
Holoships appear. If a player gets in position, the hologram becomes green.
If both holos stay green 2 seconds, the action is "confirmed"!

LEVEL DESIGN | BRICKS

OBSTACLE

It can be a wall, a rocky outgrowth, or anything physical. It obstructs the players' path and deals **1 damage on collision**.
It also bumps the hit player towards the center of the screen.

Players will have to avoid these stalagmites not to end up crashed down in a ravine.

LEVEL DESIGN | BRICKS

SIDE OBSTACLE

Walls, ceilings and floors on the **edge of the screen** collide with players and bump them toward the **center of the screen**.

Hitting the walls, ceiling, or floor here would not deal damage, but push back the players towards the center of the screen.

LEVEL DESIGN | BRICKS

DOOR

A door is an **obstacle blocking the entire screen**.

It automatically opens itself when the players reach a certain point of their path. It can either be **fully opened**, or **partly opened**.

LEVEL DESIGN | BRICKS

SWITCH

A switch can be on its own or **linked** to other switches.

It is activated when **shot by a player**. Unless all the other switches it is linked to are activated, **it deactivates itself** after a variable time (defined for each switch).

When all linked switches are activated, they **trigger** something. Most of the time, the opening of a locked door.

A non-activated and an activated switch.

LEVEL DESIGN | BRICKS

LOCKED DOOR

A locked door is a door that does not open itself automatically.

It is locked by **one or more switches**. A locked door opens itself when all the switches locking it are **activated at the same time**.
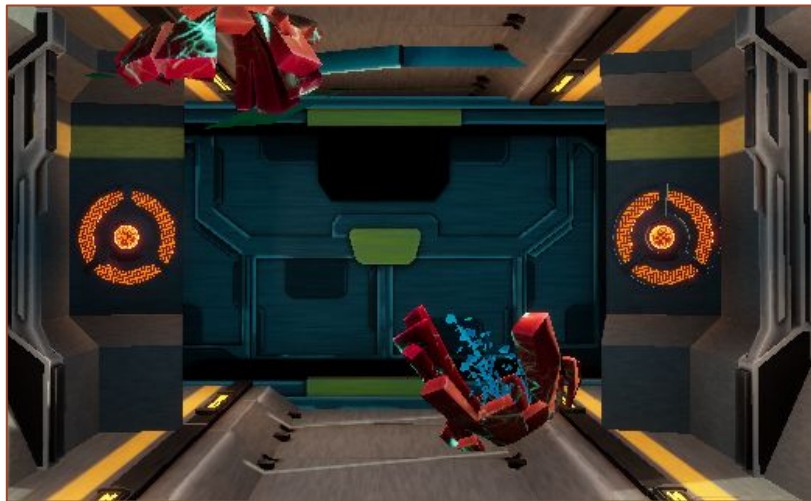
Both switches need to be activated at the same time for this door to open.

LEVEL DESIGN | BRICKS

RING

Rings are encountered throughout the level. Unless the players are fused, they appear in pairs, symmetrical around the players' path.

Rings come in a **set** (for instance, three consecutive pairs).

Rings are divided into two types:
- **Physical rings**, that are seen at the ends of a set of rings.
- **Holographic rings**, that appear between physical ones. They spawn from the latest passed ring and disappear when passed through.

Rings

LEVEL DESIGN | BRICKS

RING

Passing through a ring has the following effects:

- Regenerates **1 HP** for the passing player, or **revives** heavily damaged players **with 3 health**.
- Earns **100*(R+1) scoring points,** with **R** being the number of rings the passing player already cleared in this set.
  The amount is multiplied by 2 for each player if they both pass through a ring at the same time.
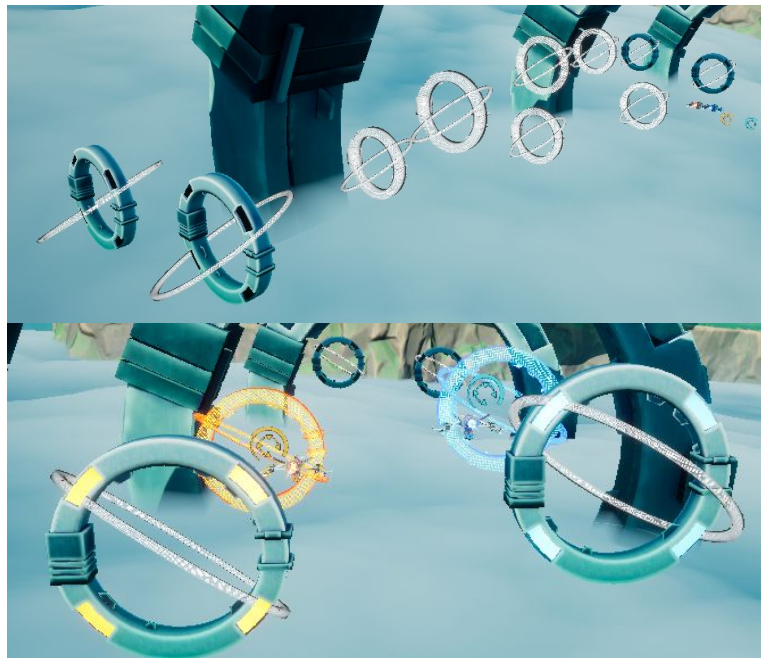
Rings

FTUE | FIRST TIME USER EXPERIENCE

Players start unable to move. They're introduced to the narrative through dialogues.
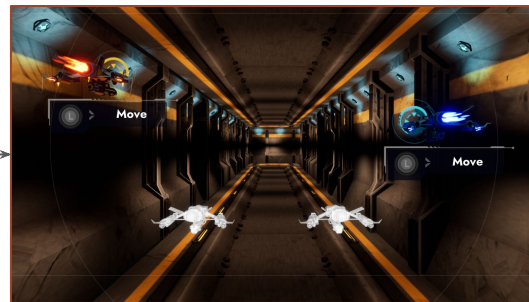
Players are prompted to move and holograms appear.

Players rejoin the holograms. After a short time, they receive a confirmation.
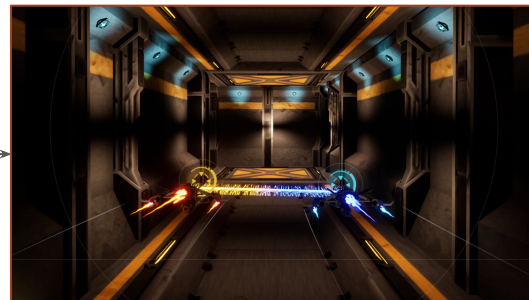
The players' synchro-link activates and the camera starts moving.

FTUE | FIRST TIME USER EXPERIENCE

Players are stopped in front of two switches. They are prompted to shoot. When shooting a switch, it changes a color for a duration then returns to its initial state.

When both players shoot the switches at the same time, the door opens and the camera starts moving again.

ENEMY BEHAVIOR

ENEMY SPLINE

Only the **Snake** enemy uses the spline behavior.
Only one Snake is created for each spline in the level.
Enemy splines are hand-placed in the levels.
The rotation of each point of the spline also affects the snake's rotation as it moves along the spline.

The spline determines the snake's **number of body parts** and **speed**. Along the spline, triggers provoke the snake's ability to **shoot**.
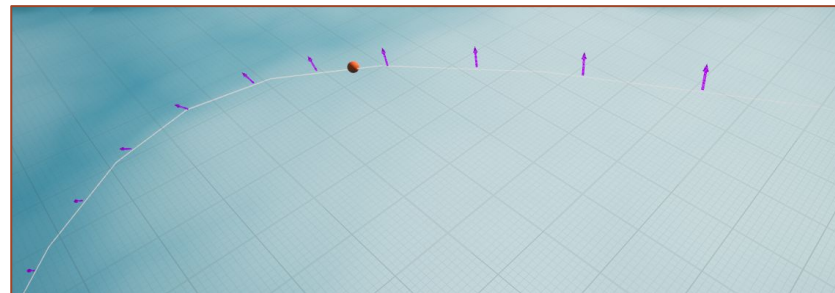
Enemy spline in level
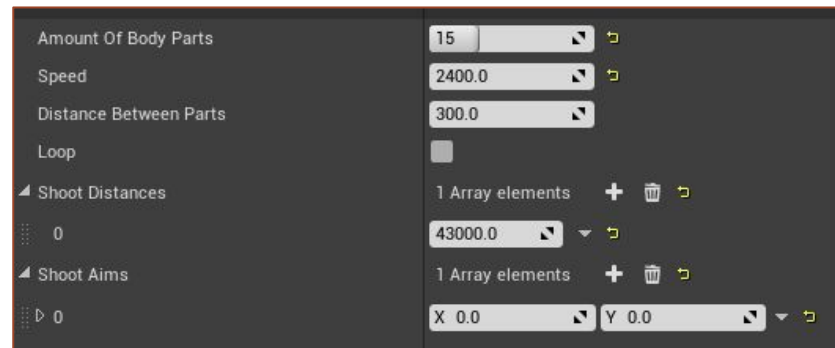
Snake options

ENEMY BEHAVIOR

PATTERN

Patterns are **splines** placed relative to the camera's position and rotation. Thus, the spline path is **attached to the screen**.

Enemy pattern triggers are placed on the players' path. If multiple enemies are called, they spawn one after the other and follow the exact same path on the spline.

Each Trigger determines the **number of enemies**, **delay between enemy spawns**, the **pattern speed**, and the **type of enemy** spawned.

Along the pattern's spline, triggers provoke the enemies' ability to **shoot** and **change speed over time**.
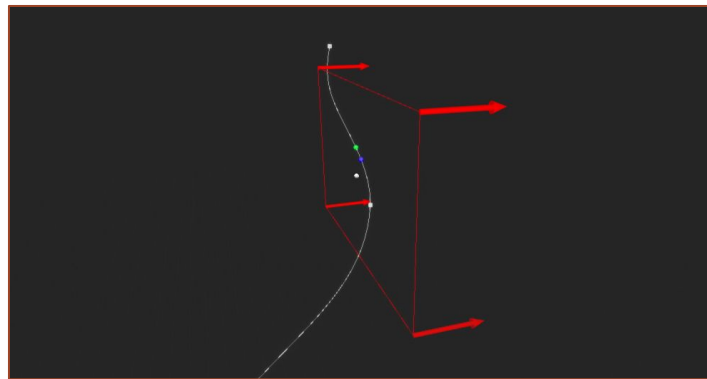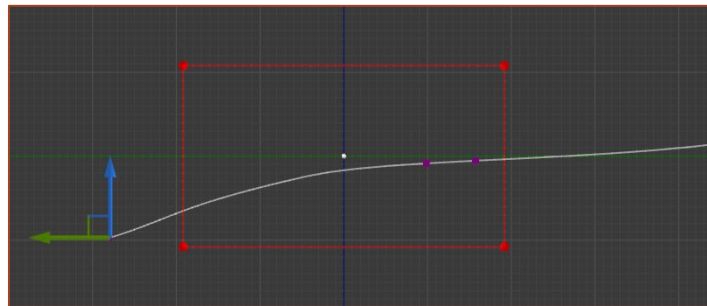
ENEMY BEHAVIOR

PATTERN NAME

Movement descriptor

Where the enemy enters the screen

Pattern name exemple : UF BL Zigzag 02

Abbreviations:
U = Up
D = Down
L = Left
R = Right
F = Front
B = Back
If the enemy comes from a corner, multiple abbreviations can be used.

Where the enemy exits the screen

Variant ID

ENEMY BEHAVIOR

PATTERN LIST

<table>
<tr><th colspan="8">PATTERNS</th></tr>
<tr><th>Name</th><th>Shots</th><th>Name</th><th>Shots</th><th>Name</th><th>Shots</th><th>Name</th><th>Shots</th></tr>
<tr><td>DB_UB_VerticalLine</td><td>1</td><td>LB_RB_Ambush_02</td><td>1</td><td>RB_RB_NearlyStatic_02</td><td>2</td><td>ULB_DRB_Ambush</td><td>1</td></tr>
<tr><td>DF_DB_Sliding</td><td>3</td><td>LB_RB_Ambush_03</td><td>1</td><td>RB_RDF_NearlyStatic</td><td>2</td><td>UB_DB_VerticalLineReversed</td><td>1</td></tr>
<tr><td>DF_DB_Sliding_02</td><td>2</td><td>LB_RB_Ambush_04</td><td>1</td><td>RB_RF_NearlyStatic</td><td>0</td><td>UB_RB_Zigzag</td><td>0</td></tr>
<tr><td>DF_DF_DownStill</td><td>1</td><td>LB_UF_MotherbaseGuards</td><td>2</td><td>RB_RF_NearlyStatic_02</td><td>2</td><td>UB_UB_FrontAttack</td><td>1</td></tr>
<tr><td>DF_LB_Loop</td><td>1</td><td>LF_LB_Spirale</td><td>1</td><td>RB_RF_ThroughWindow</td><td>0</td><td>UB_UB_FrontAttack_02</td><td>1</td></tr>
<tr><td>DF_LB_Loop_02</td><td>1</td><td>LF_RB_CircleArc</td><td>0</td><td>RB_UF_MotherbaseGuards_02</td><td>2</td><td>UB_UF_LeftCurve</td><td>2</td></tr>
<tr><td>DF_LB_Loop_03</td><td>1</td><td>LF_RB_CircleArc_02</td><td>1</td><td>RF_DB_ZigZag</td><td>1</td><td>UF_UB_Coming</td><td>3</td></tr>
<tr><td>DF_LB_Loop_04</td><td>1</td><td>LF_RB_Corridor</td><td>1</td><td>RF_LB_Approach</td><td>3</td><td>UF_UB_Coming_02</td><td>3</td></tr>
<tr><td>LB_BU_ReversedL</td><td>0</td><td>LF_UB_StraightCurve</td><td>0</td><td>RF_LB_CircleArc</td><td>0</td><td>UF_UF_Miniboss</td><td>30</td></tr>
<tr><td>LB_LB_NearlyStatic</td><td>2</td><td>RB_LB_Depth</td><td>1</td><td>RF_LB_CircleArc_02</td><td>1</td><td>UF_UF_Square</td><td>2</td></tr>
<tr><td>LB_LB_StaticAttack</td><td>2</td><td>RB_LB_Depth_02</td><td>0</td><td>RF_RB_RightCurve</td><td>1</td><td>UF_UF_UpStill</td><td>1</td></tr>
<tr><td>LB_LDF_NearlyStatic</td><td>2</td><td>RB_LB_LowPass</td><td>0</td><td>RF_UB_Zigzag</td><td>1</td><td>UF_UF_UpsStill_02</td><td>1</td></tr>
<tr><td>LB_LF_NearlyStatic</td><td>0</td><td>RB_LF_LowPass</td><td>0</td><td>RF_UB_Zigzag_02</td><td>1</td><td></td><td></td></tr>
</table>

SITUATIONS

FOREST / DODGING CHALLENGE

Players must fly between vertical and horizontal pillars.
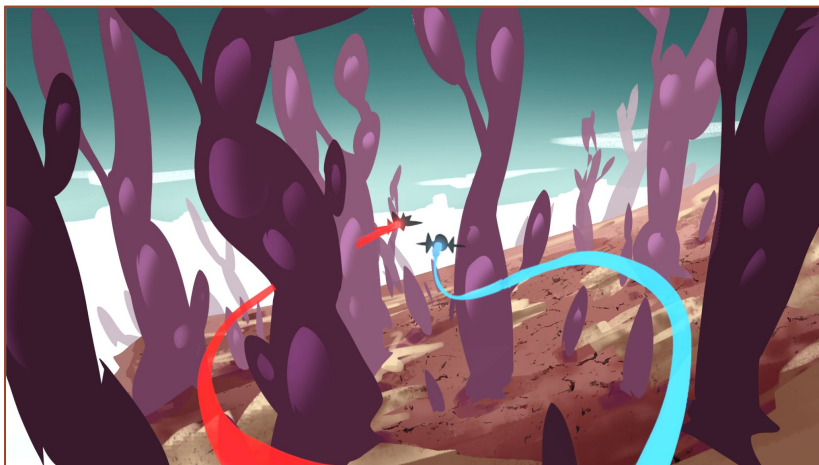
ENEMY CHAIN

Players must destroy multiple aligned enemies. Gives a high rhythm and fast feeling.
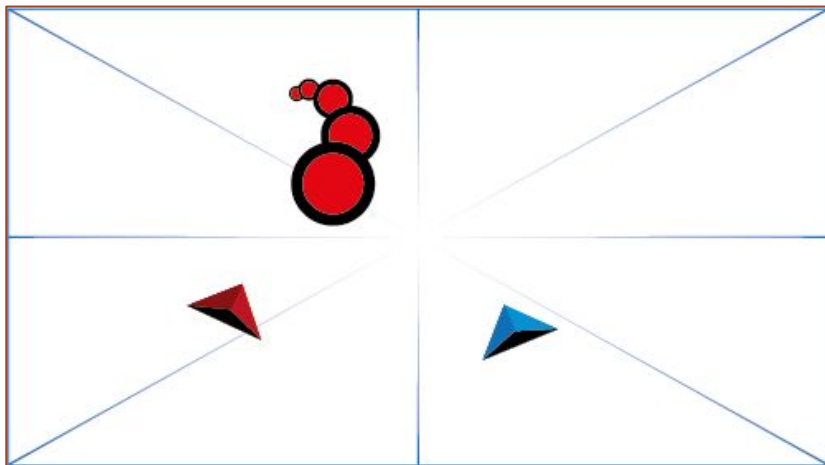
SITUATIONS

TIGHT DODGING CHALLENGE

Players are cramped in a claustrophobic space where they have to constantly adjust their positioning to avoid hitting walls.
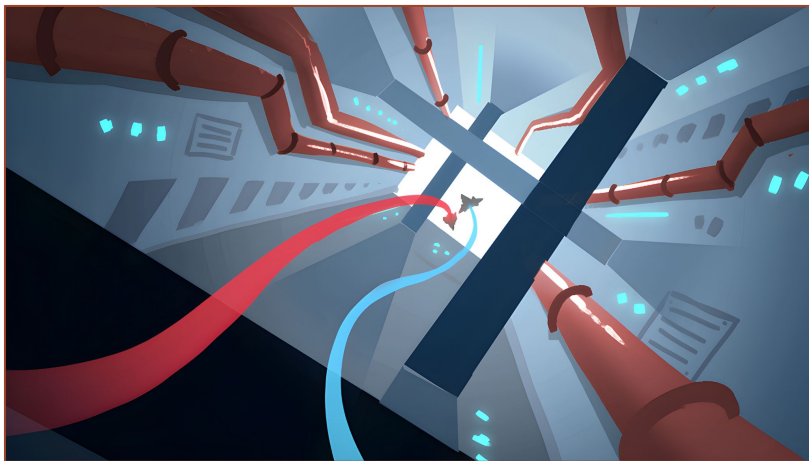
ENEMY INVASION

Enemies attack from both sides at once. Players will have an easier time dealing with the threat if they coordinate their attacks.
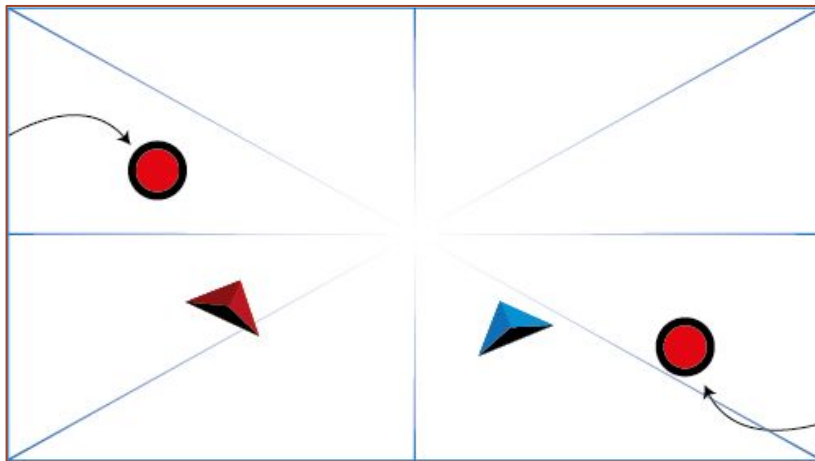
SITUATIONS

EMPTY SPACE

Players fly through a safe, empty zone, which allows the game's rhythm to lower momentarily.

ENEMY HIDING

Enemies weave in and out of view by hiding behind environments. Timing is required to destroy the enemy at the right time.
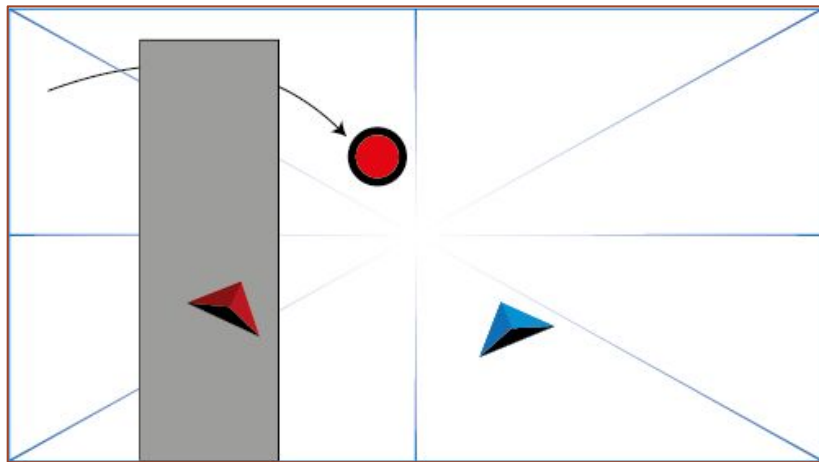
SITUATIONS

ENEMIES LINED UP

Enemies are lined up. Players can destroy them individually, using their basic controls, or work together for a better (and more satisfactory) feeling.
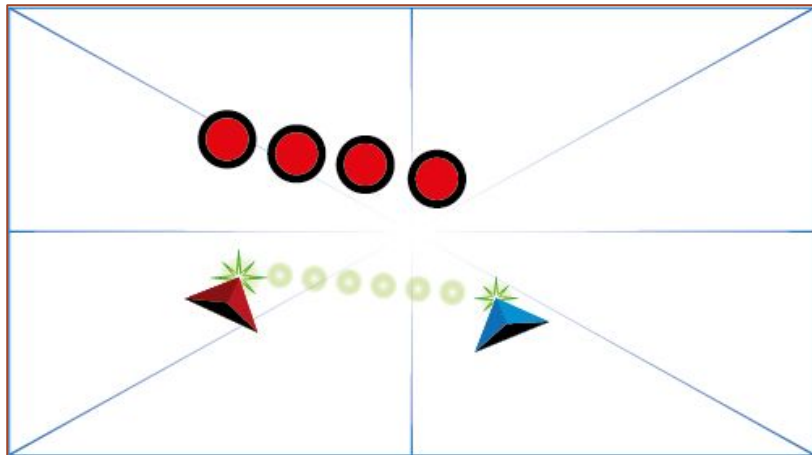
BUTTON AND DOOR

A door is blocking the path! Players have to shoot both buttons at the same time to open the door before they crash into it.
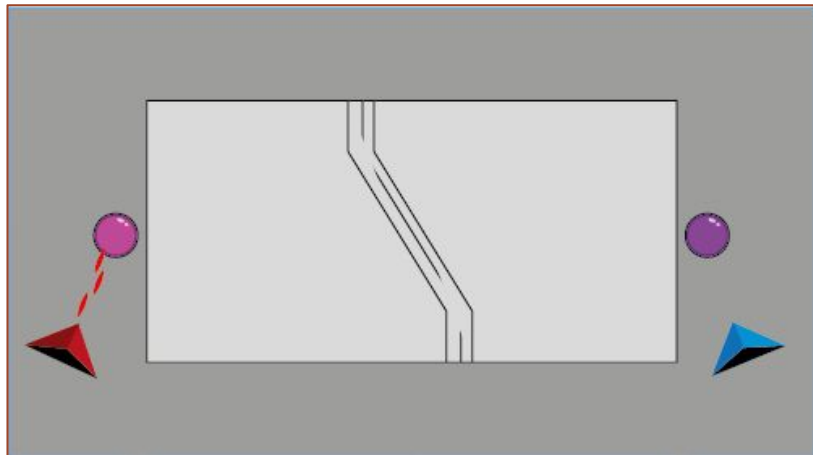
LEVEL DESIGN | GLOBAL PATH
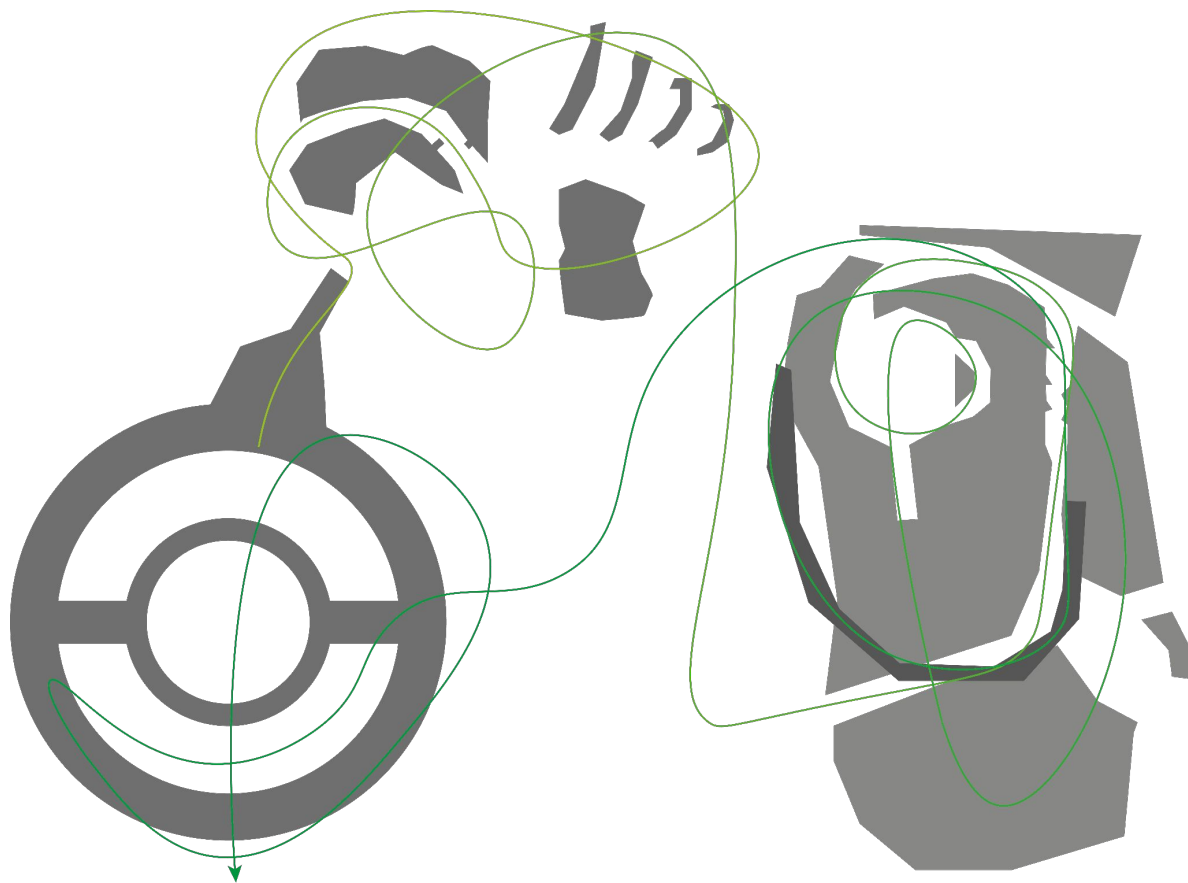
→ Player Path

This is the path players will follow through the level.

Attention has been given to re-use level assets as much as possible by looping around them.

LEVEL DESIGN | PART 1

Movement tutorial

Shooting tutorial

Ascension

Application

Building anticipation

KEYS

| | Door synchro interaction | | Creeper | | Automatic door | Speed down / Speed up | | Coral | | Dialogue | | Intentions |

Part. 2

TWIN CORES

Dodging, Precision Challenge

Learning Pattern, Tension

Learning Fusion, Calm

A	Mines Trigger
	Dialogue
↓	Speed down
↑	Speed up
	Snake Enemy
▶	Pattern Enemy
■	Turret Enemy
★	Nemesis
⇢	Enemy Path
→	Player Path
	Ring
	Intentions

LEVEL DESIGN | PART 3

**Open space fight
Moving targets**

A

C

B

D

x3

x3

B

C

D

A

x5

Calm, Healing

A (mines)	Mines Trigger
(blue ellipse)	Dialogue
↓	Speed down
↑	Speed up
(red snake)	Snake Enemy
▶	Pattern Enemy
■	Turret Enemy
★	Nemesis
⤍ (dashed)	Enemy Path
→ (green)	Player Path
◯	Ring
(yellow outline)	Intentions

LEVEL DESIGN | PART 3

Juicy
Final Mines

Juicy
Enemy swarm

x7

E

F

A	Mines Trigger
	Dialogue
↓	Speed down
↑	Speed up
	Snake Enemy
▶	Pattern Enemy
■	Turret Enemy
★	Nemesis
- →	Enemy Path
→	Player Path
○	Ring
	Intentions

LEVEL DESIGN | PART 4

7. Boss fight

5. Dodging and shooting

4. Synchro-Puzzle (distance)

6. Synchro-Puzzle (rapidity)

3. Dodging and shooting

1. Defusion and Boss introduction (Motherbase's laser)

2. Dodging and shooting

Legend:
- Cores
- Synchro door
- Laser
- Laser shot
- Automatic door
- Enemies wave
- Ring
- Turret
- Player path
- Nemesis
- Intentions

UI

UI | OVERVIEW

Player Character Health

Score

Dialogue (only visible when characters are talking)

UI | OVERVIEW FUSION

Player Character Health

Score

Dialogue (only visible when characters are talking)

UI | OVERVIEW FUSION - SWITCH

When characters are switching roles, a switch text notification appears.

UI | WARNINGS

Linear warnings

Circular warnings

UI | DIALOGUES

DIALOGUES

In order to **deliver the narrative** to the players, dialogues are used. They are also exploited to support **tutorials**.

They take the shape of a **box** containing:
- **Name** of the speaker (Motherbase, player 1 (J-1L) or player 2 (V-4L)),
- **Icon** of the speaker,
- **Text.**

Dialogues are **voiced** and each character has its own **voice actor** and **sound processing**.

Dialogues are triggered through **events** placed on the players' path, or at specific time through **code**.

UI | BARKS

BARKS

Bark (only visible when characters are talking)

UI | BARKS

BARKS

Barks are short sentences characters pronounce when **specific events** happen in game. Like dialogues, **voicelines** accompany them.

Barks use multiple conditions to be triggered, such as:
- Is an **Event** triggered?
- What **part of the game** players are in?
- Which **Player** triggered an event?
- Is a **Cooldown** in effect?

Currently, we have barks on:
- **Perfect completion of a Ring Challenge,**
- **Players death,**
- **Player uses revive,**
- **Players switch role in fusion mode,**
- **Snake head destroyed.**

Not to disturb players during gameplay, bark subtitles are displayed at the **bottom of the screen**, in a discrete frame.

UI | LOCALIZATION

All in-game text is localized, and available in english and french. To accomplish that, we use data and string tables, in addition to UE4's Localization Dashboard system.

Dialogues string & data tables

Localization Dashboard

https://docs.google.com/spreadsheets/d/1EQILME2nAN1syIqDhafFg-bk8Y88OSlUs5IxG98OiUg/edit?usp=sharing

UI | CINEMATIC

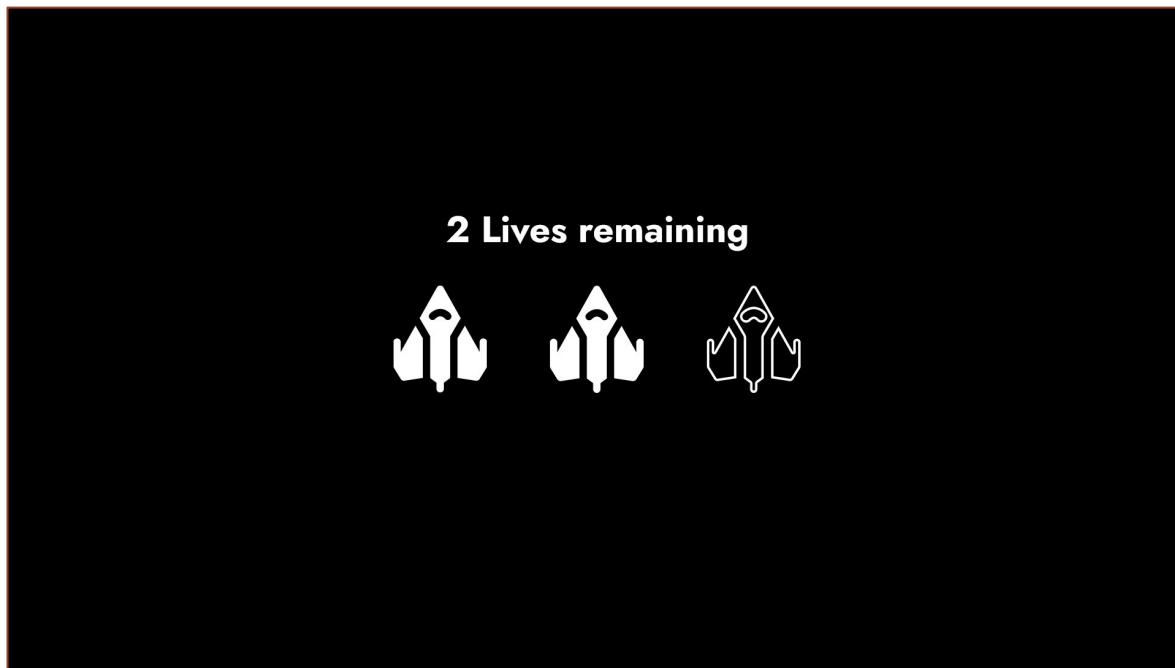J1-L, V4-R : bienvenue dans la station de terraformation C2.

No UI displayed in cinematic mode. Black bars appear
to inform the players it is a cinematic.

UI | TUTORIAL

UI Tutorial Box follows the player character and disappears upon tutorial completion.

UI | DEATH/LIVES

The screen shows the amount of lives remaining for the players when they die and restart from a checkpoint.
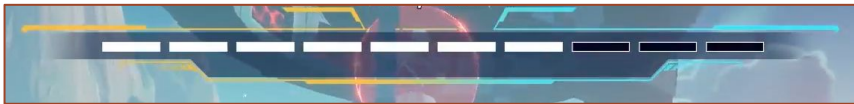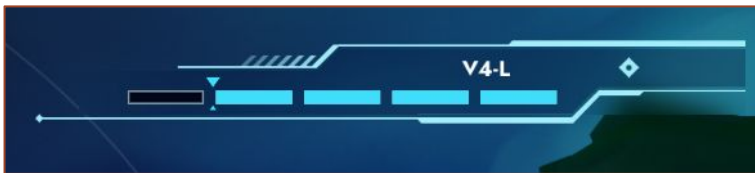
UI | HEALTH

HEALTH BAR

The main player health bars are on the top corners of the screen.

Those health bars are visible at all times.

When the players are in fusion mode, the health bar changes to match the new game mode.

MINI HEALTH BAR

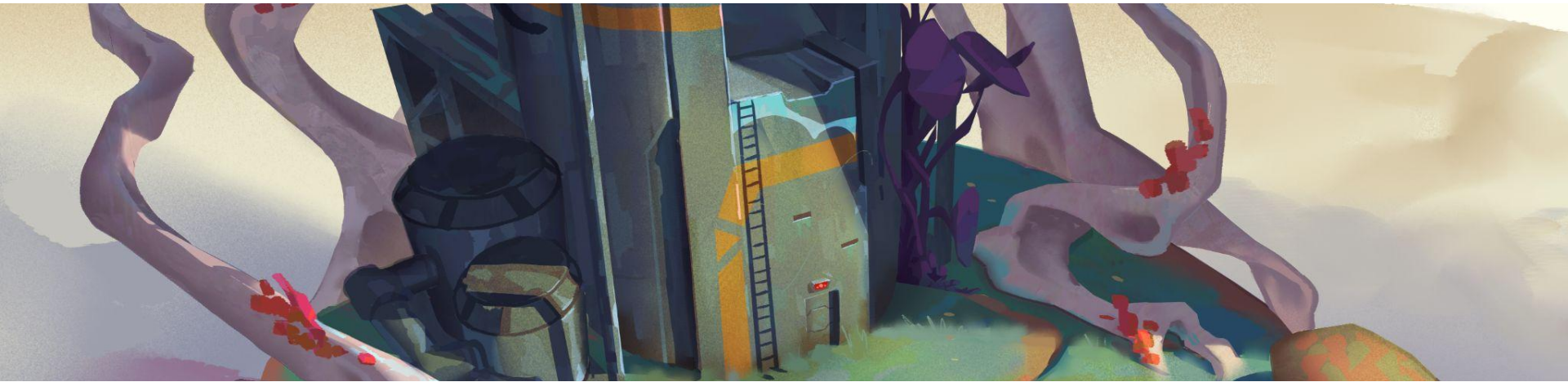Another, smaller health bar appears conditionally next to each player's ship.

The bar appears if the player character's life value changes (either because it is **healed** or **damaged**) for a duration of 2 seconds.

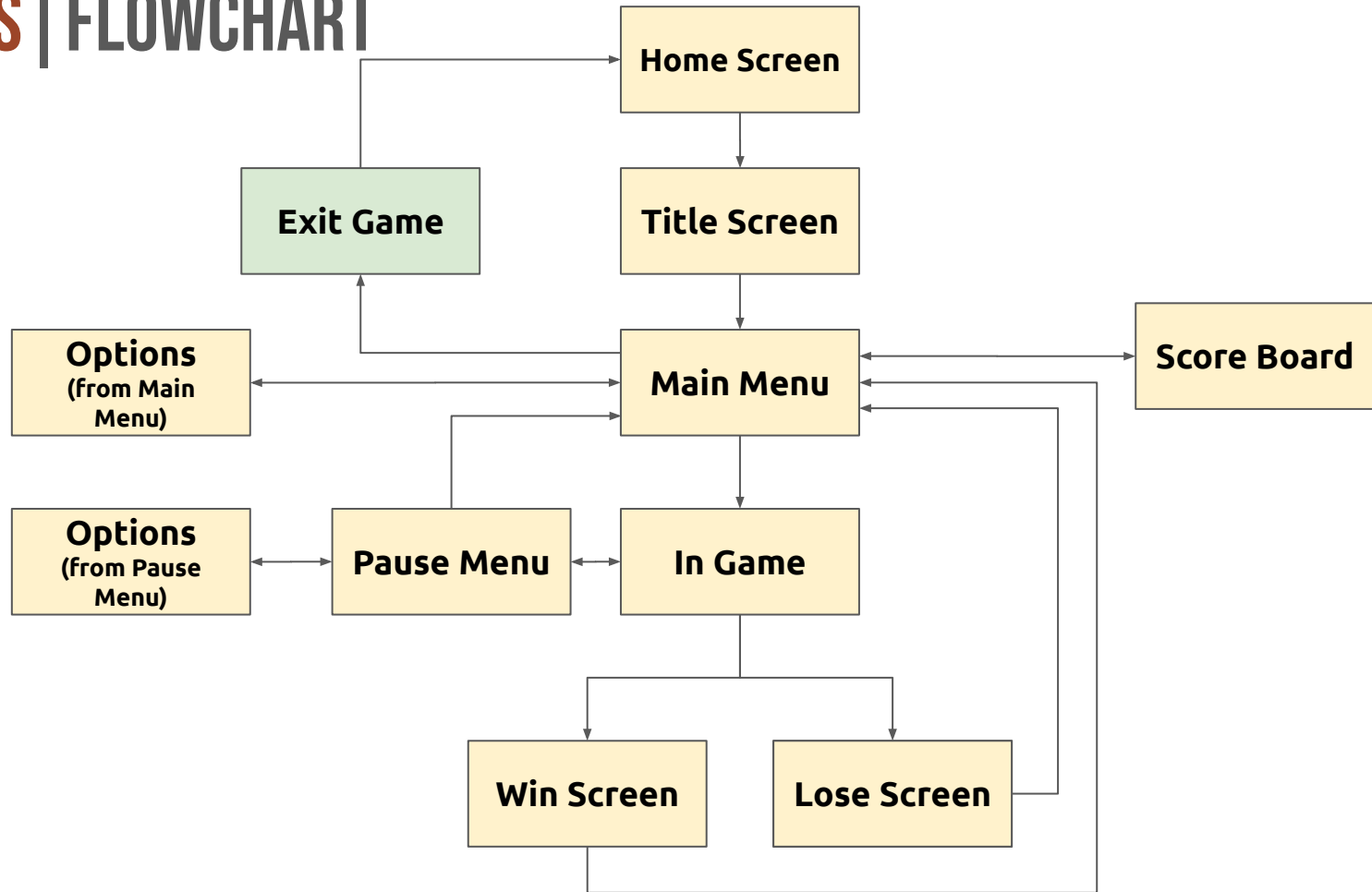The bars stays visible if the player character's health has the value 1.

MENUS

Start

Twin Cores

TWIN CORES

PLAY

LEADERBOARD

OPTIONS

CREDITS

01

01

EXIT

Hold !

Hold !

LEADERBOARD

Team Name	Score	Contribution	Kills	Deaths
J1L and V4L	418,040		1,747	27
Bob	58,862		212	2
Sympa	51,662		190	0
J1L and V4L	21,820		30	2

BACK

When players end a run, they can input their team name. All the runs' scores are shown from best to worse. Players can scroll down to find their own score.
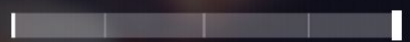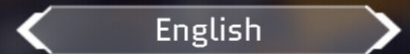
OPTIONS

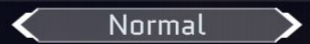|			
Master Volume			
Music			
SFX			
Voices			
Language			English
Invert X Axis Player 1	Normal	Invert X Axis Player 2	Normal
Invert Y Axis Player 1	Normal	Invert Y Axis Player 2	Normal

Back

Reset

CREDITS

Game Artist

Clément RIGAUX

Antoine COSTE

Tanguy THIEBAULT

Romain FOURNIER

Music & Sound Designer

Pierre DAUNIS

Game Designer & Programmer

Gabriel MASSÉ

Gabriel NIVAUD

Game Programmer

Marceau GAULT

Antonin JOUANY

Voice Actor

Mégane FRADIQUE

Porter HUMBERT

Game Designer

Amandine FRADIQUE

Samuel GAY

Maxence QUENEDEY

Thomas ROGULSKI

Producer

Alessandro CAVALLARI

ISART
DIGITAL

VIDEO GAME & 3D·VFX FILM SCHOOL

PARIS · MONTREAL · 2023

Back

2,000

PAUSE

Resume

Options

Main Menu

Solo

Fusion

Barrel Roll L2 R2

L2 R2 Barrel Roll

Pause OPTIONS

OPTIONS Pause

Super Shoot

Move

Move
Aim

Shoot

◇ Both Players   ◆ Driver   ◆ Shooter

VICTORY

	Player 1	Player 2	TEAM
Score	29,381	27,011	56,392
Kill(s)	105.5	97.5	203
Death(s)	1	1	2

S

LEAVE

PLAY AGAIN

DEFEAT

	Player 1	Player 2	TEAM
Score	240	320	560
Kill(s)	0	0	0
Death(s)	5	5	10

D

LEAVE

PLAY AGAIN

GAME FLOW
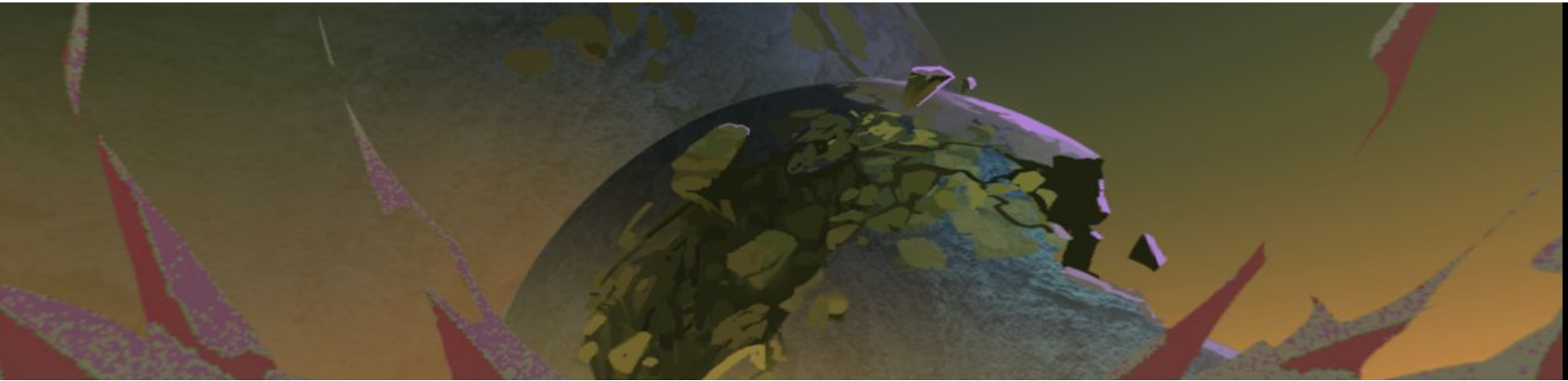
FLOWCHART SITUATIONS

GAME LOOP | MICRO

OBJECTIVE

Destroy an enemy wave

CHALLENGE

Aiming at enemies while dodging potential threats

REWARD

Power feels and score

GAME LOOP | MID

OBJECTIVE
Play through the next part of the level

CHALLENGE
Survive until reaching a checkpoint

REWARD
Players will restart from the checkpoint if they fail later on

GAME LOOP | MACRO

OBJECTIVE

Completing the game to beat the high score

CHALLENGE

Completing the game while scoring maximum points

REWARD

Owning the new best high score.
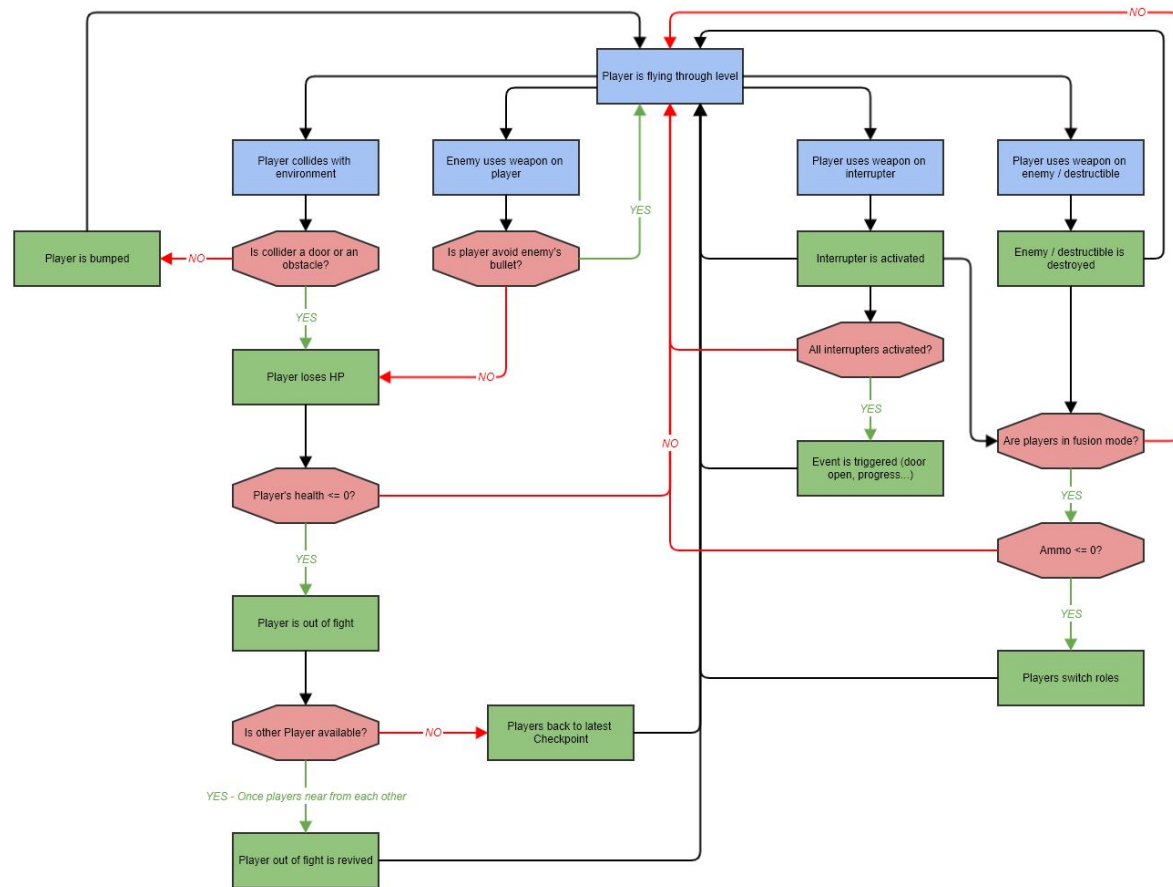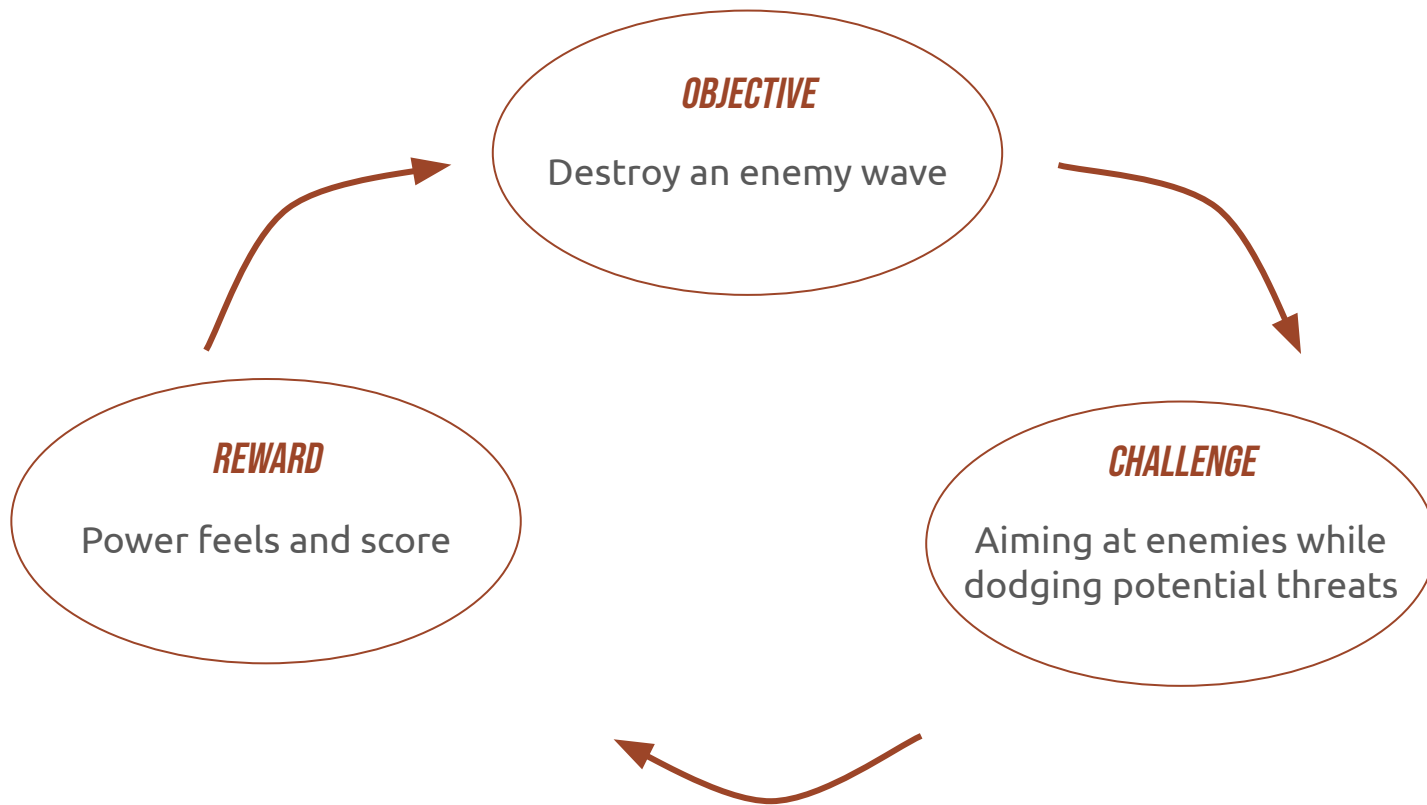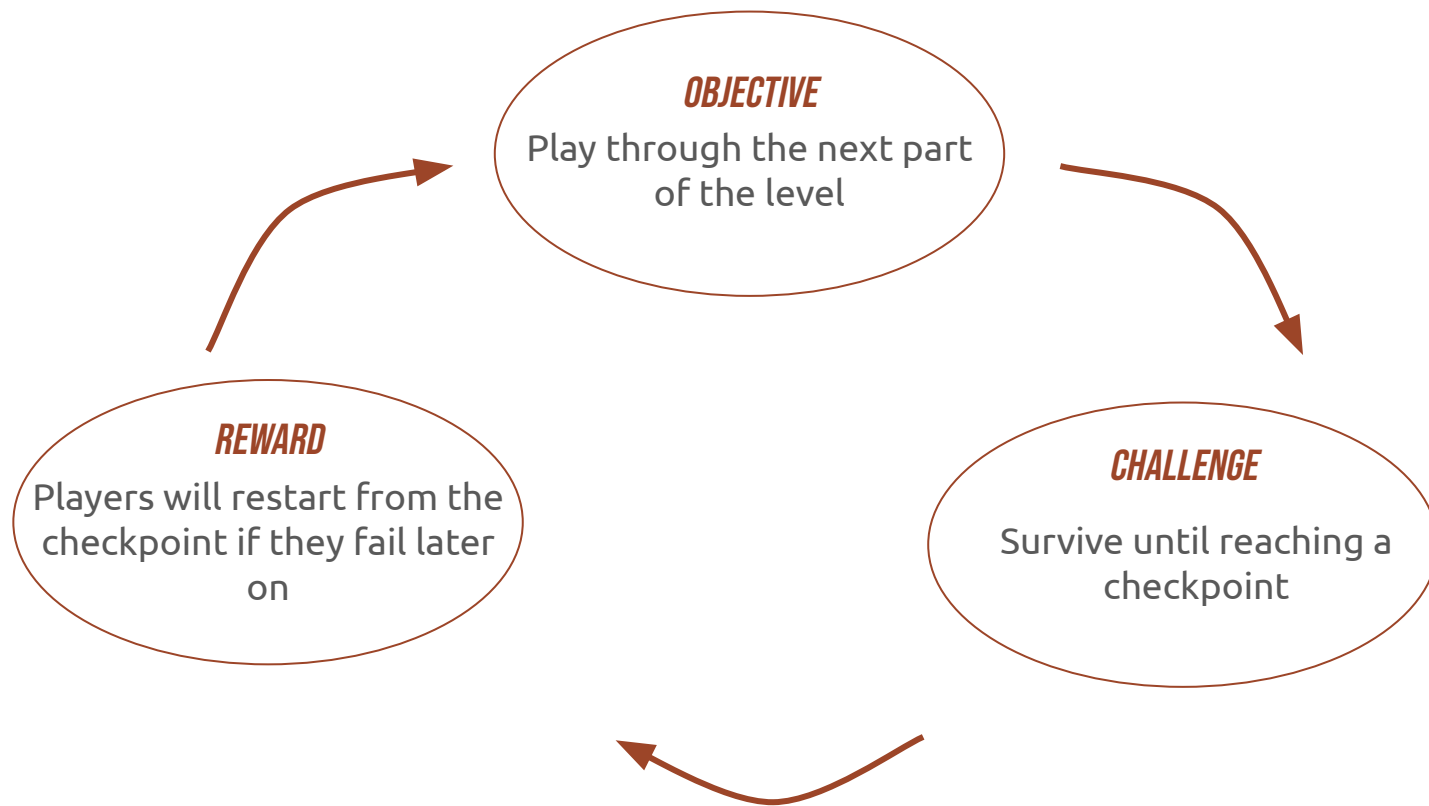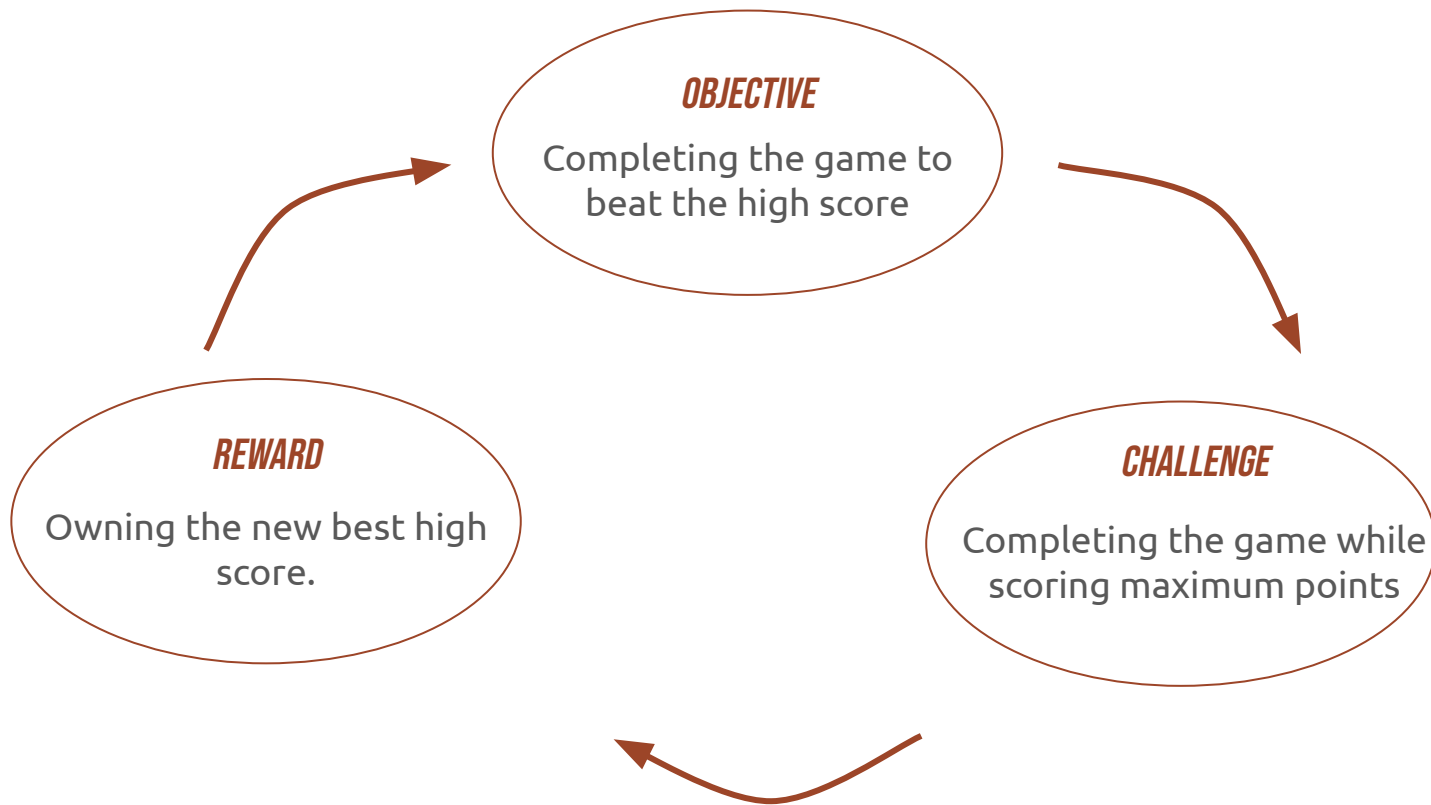
SCORING & RANK

The players are given a common rank at the end of a game based on their total score as follows :

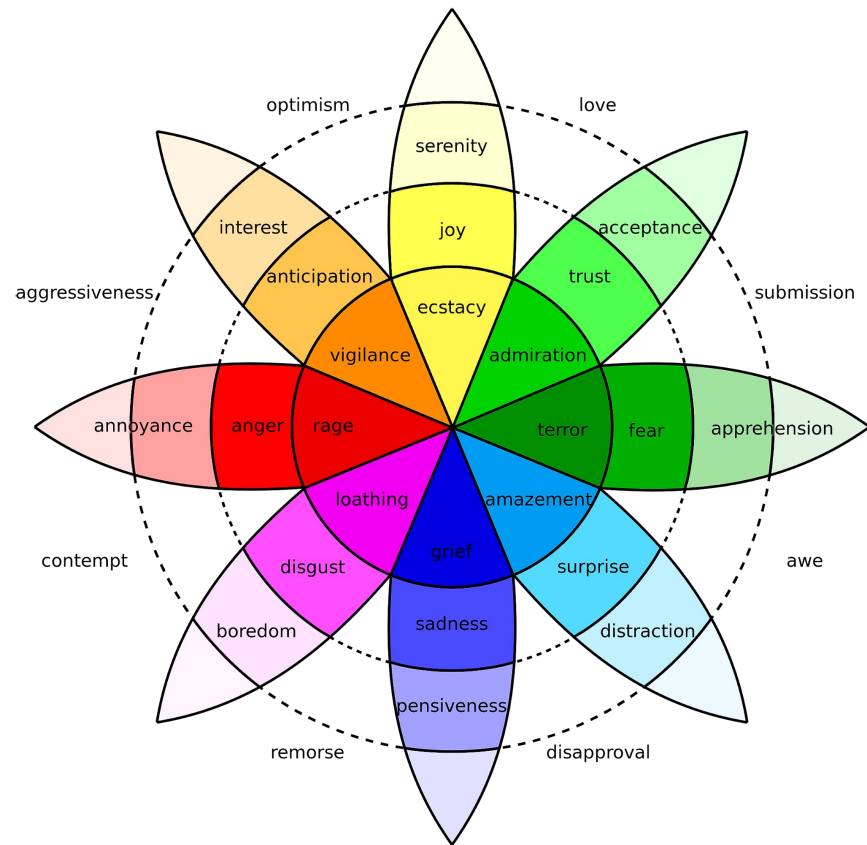|			
S+	65.000 points or more	**B**	40.000 to 49.999 points
S	55.000 to 64.999 points	**C**	30.000 to 39.999 points
A	50.000 to 54.999 points	**D**	0 to 29.999 points

GAME FEEL

EMOTIONS

- Ecstasy
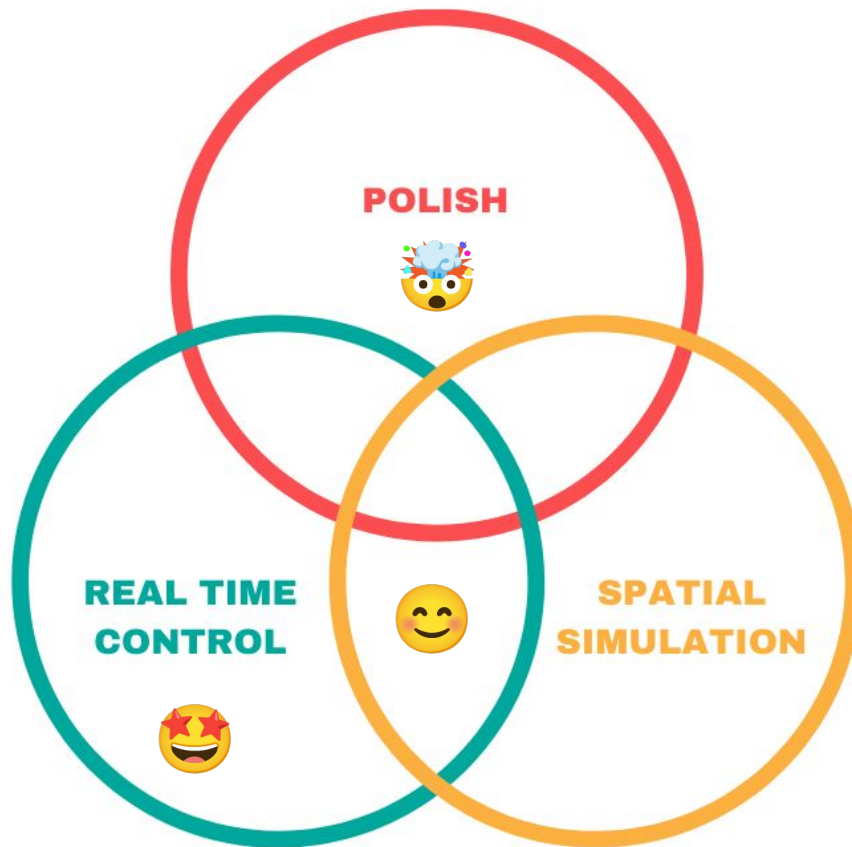
- Amazement

- Satisfaction

EMOTIONS

- Ecstasy 🤩

- Amazement 🤯

- Satisfaction 😊

POLISH 🤯

REAL TIME CONTROL 🤩

SPATIAL SIMULATION

😊

ANIMATION PRINCIPLES

ECSTASY	*AMAZEMENT*	*SATISFACTION*
Anticipation	*Staging*	Timing & Motion
- Enemies entrance - Shots/Attack loading - Screenshake / 'Warning' before an enemy wave	- Quiet phases, slow downs to take in the scenery - Camera changes - Acceleration / Deceleration on the rail	- Synchronized actions (shots, barrel roll) - Music synchronicity with LD - Level Pacing

Timing and Motion

Staging

Anticipation

BIG PICTURE
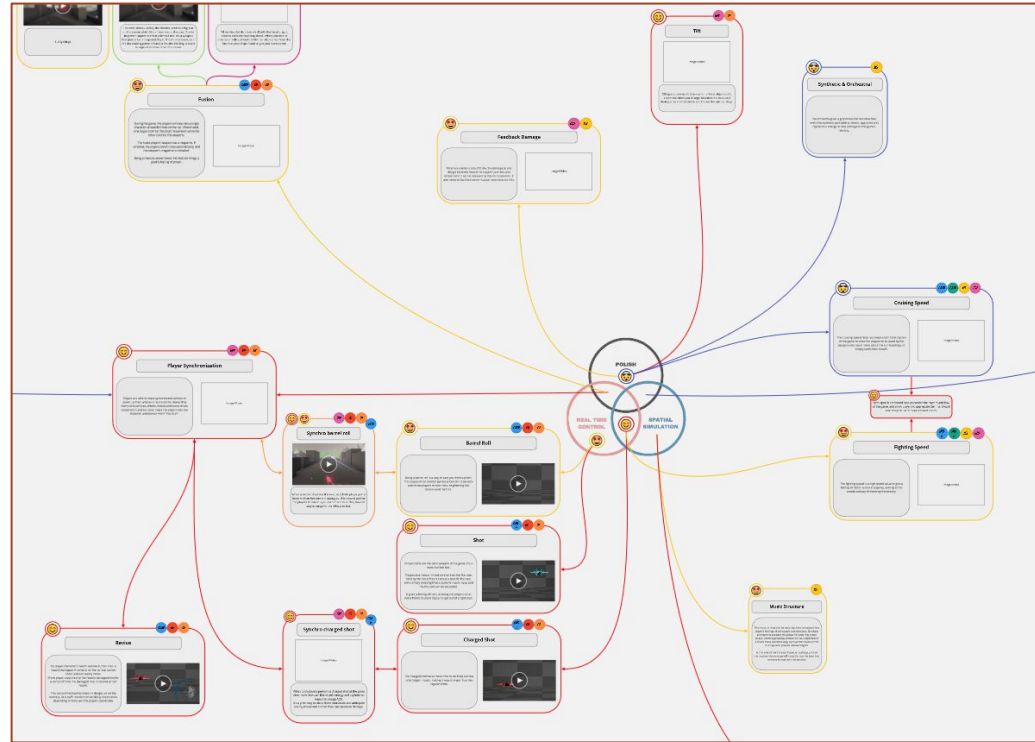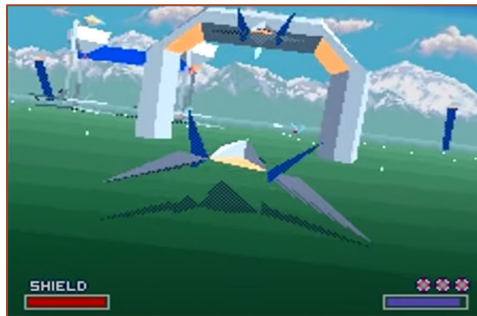
EXTRA

REFERENCES

Star Fox (NES)
Arcade feel

Star Horizon
Navigation, Environment

Star Wars
Ship race / chase scenes

Nier Automata
Pacing