

Earth Expeditionary



Game Design Document

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Introduction

OVERVIEW

Game

Earth Expeditionary, a PC and console first-person tactical shooter.

Pitch

In 2025, a hostile alien force attacked Earth, starting a long and bloody war against them on our home turf. Now, years later, pocket resistances still fight against the endless hordes in the hopes of freeing their homeland. Gear up your character with four others as an expeditionary force out into the ruined cities, attempting to scavenge equipment, technology, survivors, and information on your foes.

Style and Tone

Since the setting is effectively sci-fi guerilla warfare/post-apocalyptic, deterioration of surroundings should be prevalent; buildings should have common characteristics like being burnt-out, neglected, or partially/wholly destroyed. Complementing the destruction, the colour palette should be very dark but contain some brighter reds for fire and blood. The game should feel fairly somber (save for some one especially chipper NPC trying to make the best of things), and players should feel on edge/tense whenever they aren't actively in focus on combat, but also have minigames (explained further in the 'gameplay' section) and different objective types in order to break up gameplay from monotonous gunplay.

Pillars

Impactful customization, coordination focused, and sense of progression.

DETAILS

Core Features

Designed in the same vein as Tom Clancy's The Division/Call of Duty: Ghost's Extinction game mode/Tom Clancy's Rainbow Six: Siege's Outbreak game mode, players should be fighting against waves of enemies in a partially destroyed/overtaken city, fighting with close-to-modern weaponry co-operatively with other players against AI. As with the first game mentioned, players will have an assortment of gear and customization options that can be discovered and upgraded by scavenging in missions and by leveling up in an RPG style, and like the second example should have class-based character selection that dictates special abilities and bonuses that each player has available.

Although there should be minimal equipment restrictions between classes, each should have a unique gadget or perk that fits their role and boosts their team. For instance, the Biological Scientist would be able to equip a temporary deployable medical item for their team, choosing between such options as damage resistance, bleed-out slow, healing, or revival. Likewise, the Gunsmith would be able to choose a persistent bonus to weapons throughout the level, such as decreased recoil or increased magazine size.

Each class would also have a bonus to one of the specific minigames available; if the players are doing a 'Track' objective where they need to find the path that a target took, the Survivalist would have their sensory specialty that would allow them to see visual cues such as footprints more easily. This doesn't prevent other members from completing the role of the minigame, but increases the group's overall ease/speed by having the 'correct' character do it. Another example would be 'Rewiring', where players need to connect the appropriate wires to each other (as per a chart) to open an object such as an electric door (where connecting an irrelevant wire would do nothing, and an incorrect connection would revert progress); the Systems Engineer would never grab irrelevant wires.

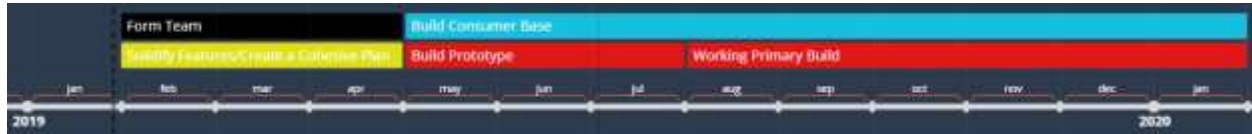
Supplementary Features

To prevent stagnation, it is also fairly important that the mission system is dynamic; an interesting mission shouldn't be comprised of static objectives in a predetermined series, but should be procedurally generated, and be modified based off of player action earlier in the level (such as rearming dormant traps if there was a Rewiring fail earlier). Incorporating an RPG-style gear system also allows for radiant loot and progression to occur (such as in Tom Clancy's The Division), in addition to allowing for a power-level based 'zone' system.

Ideally, since players are going to be obtaining loot semi-randomly, each item is also going to have an effect on their character. For instance, a 'pocketed' item would allow for more ammunition/gadgets to be carried, whereas a 'Kevlar' item would increase the player's damage resistance. This when combined with a weapon customization system allows for not only a wide range of equipment use, but also increases the maximization possible to Explorer players (based off of Bartle's Taxonomy), in addition to allowing for player expression via designing the look of their character.

Scope

Time Frame



Required Team

Audio/Visual Artist(s)

A couple full-time members would likely be required in order to ensure that all work could be completed and revised for vision cohesion. On the off-chance that full-time members are unfeasible or not required, these positions could be filled by freelance hiring/commission.

Modeller/Animators

A couple full-time members would be required in order to ensure that all work could be completed and revised for vision cohesion.

Programmer/Scripters

Multiple full-time members would be required in order to ensure that work could be done in an efficient, well-commented, and revised manner.

Financial/Legal

Relevant professionals would be contacted as required; team members with experience would be beneficial, but dedicated members seems overkill.

Marketer

Likely a single person that could help spread the word and focus development, in addition to attracting potential customers/investors. Ideally, this role would be fulfilled by someone with reviewing experience and critical analysis skills, in order to help break down the components of previous/similar games, and see where improvements and developmental/experience pitfalls exist.

Market

Target Audience

There are multiple audiences that I think will be interested in this type of game. The most common would be **thrill-seekers** that enjoy playing such games as FPS for the action; they are excited by the risk of losing, and invigorated by their success of killing mobs of enemies (IE, the Challenge Aesthetic in MDA Theory). Since combat is an important part of the game and primarily what the characters will be doing while in-mission, it is easy to see why this type of consumer would be attracted. The weaponry and combat mechanics in-game will mostly be focused around satisfying these types of players.

A secondary audience type would be the **'scientists'** that love the background details of the game (IE, the Narrative Aesthetic in MDA Theory). This type of consumer is interested in unravelling plots and the 'why', and is also the one that in-game codices are generally made for; ones that are interested in poring over the specifics of in-game elements, even if they don't directly affect gameplay. They are also likely the ones that would be most interested in the game having a cohesive style/tone, as a story consistent in its presentation is more compelling and engaging.

The third audience type is the one that I myself fall into; **strategists** that love creating and executing plans, and maximizing systems to obtain the most effective or interesting results (IE, the Expression Aesthetic in MDA Theory). These types of players tend to be interested in the many game mechanics, and how they work together as dynamics. This type of player is also great for determining balance in a system; those who wish to maximize their offensive capabilities for instance will find the most efficient way of dealing damage. If the different methods are unbalanced (or a few can combine in a certain way that others can't), then these other methods will be discarded for the sake of pursuing efficiency. As such, developers can learn from them and try to make different systems viable in different situations, and/or make all systems worthwhile by ensuring equal fun and power.

Uniquity

Previous Games

Tom Clancy's The Division had no end-game replay-ability, and merely made enemies more difficult by increasing their damage resistance/output.

Destiny had a very grindy and scarcely worthwhile gear grind.

Payday 2 had too stale/monotonous of missions, with very minimal change in gameplay.

R6S offers too much trolling of teammates, especially due to its competitive setting.

Warframe offers too much content/currency types to try and keep track of.

Mabinogi doesn't have enough gold sinks compared to generation, and has power/feature creep, where new items are overpowered and features are quickly irrelevant.

Dying Light's weapon degradation system was too quick/harsh.

Ghosts Extinction reset progress with every play through, and had stale objectives.

Evolve was too team-synergy reliant, and pre-made teams were the only ones likely to defeat the monster.

Lessons Taken

Based off of my personal experiences with the aforementioned games, I have come to the conclusion that play must be meaningful and dynamic in order to stay interesting to players. Mindless grinding is tedious and boring to a lot of FPS players, and will cause them to drop the game if they are required to do too much of it for little-to-worthless rewards. Likewise, a stale map/mission system reduces replayability, because only so much unique gameplay can come from a static environment. By having dynamically generated levels and careful regulation of earning and spending of in-game currency, I can ensure that players are motivated and rewarded for playing, and stay interested in the new experiences that they encounter.

Additionally, I want to encourage cooperation between team members by allowing for quicker missions by using the 'right' character for minigames and increasing rewards when all players still live, but don't want to force players to play certain ways or be locked unless they have a certain character, as it allows for people to troll or slow down a group due to lack of experience.

Platform

Main Platform

It seems most logical for the main platform for release of the game to be PC. This platform offers a few benefits over a straight-to-console release; primarily, rapid prototyping is simple due to being able to test the game on the machine(s) used to build it. Lack of conversion required will also reduce the complexity of publishing the game and dealing with bug testing/translation to consoles (such as console remapping or power limitations). Furthermore, PCs can be iteratively upgraded (unlike consoles which are generally replaced), allowing for the game's complexity and power requirements to be increased over time as necessary (and if not, adapted to newer technology), as well as serving the widest non-mobile range of potential consumers.

Although it may be possible to develop the game to work as a VR/AR system, the limitations of current technology compounds with the money/time required to adapt to such systems (and my own relative inexperience with them), making it unlikely to succeed or be efficiently built as a first project.

Ports

Current systems available to port to include mobile and the Xbox One (S/X), PS4 (Pro), and Nintendo Switch consoles. The latter are more likely to be successful due to the non-casual nature of the game, the requirement for advanced input (past the simple limitations imposed by having a touchscreen), and the wide range and hardware limitations of mobile devices. The minigames could potentially be released separately or alongside a game-companion application for mobile devices though. If the game were ported over, it would probably be in a top-down, twin-stick (with additional buttons for abilities/gadgets) shooter manner.

Software

Engine

As the game team only consists of myself -and my knowledge is restricted to Unity and Unreal Engine- the options for building the game are limited. Should there be programmers that join the team that are familiar with more powerful engines, there is the potential for development time to be reduced. Conversely, I am limited in my ability to assist with rapid prototyping if the game is built in an engine that I am unfamiliar with.

The best option for building between the two engines I am familiar with would be Unity due to my familiarity with SourceTree, which allows for multiple members of the team to work on the project at once.

Programming Language

The programming language has the same constraints as the engine; I am familiar with C# and C++ for Unreal 4, and would be limited in my ability to assist in other languages. Although I am more comfortable with UE4's visual scripting, this is at odds with C# being used by the engine I have more experience with, so it is likely that this game would be best built in Unity using C#.

Programming Needs

The game's development speed would benefit greatly from having multiple competent programmers, which is why it is the chief team requirement that this game has. The following is an approximate list of what would need to be built. If the game were built by one step at a time, it would be logical to start by doing a universal character frame, followed by the other categories. After the frame is complete for the main components (excluding UI and Progression), the basic steps could be completed, following until the 'advanced' step is complete. Once all main interactions are complete, the UI and Progression could be added.

Programming Needs Table

Category	Frame	Basic	Intermediate	Advanced	As Able
Characters	Universal character controller to get a rough control of character movement speed and range.	Add the five classes and their passives.	Add abilities to the five classes.	Add minigame bonuses.	Add additional characters.
Environment	Rough area including mantles and jumps to flesh out character movement and traversal.	Create mission chunks that can be played through, and incorporate areas where minigames would be completed.	Add dynamic chunk loading to prevent mission stagnation.	Include the spawning of objectives/objective paths and environmental hazards.	Dynamic/reactionary levels, additional tilesets.
Weapons	One weapon of each type to test on character controller to determine approximate weapon handling speeds.	Flesh out capabilities of multiple weapons. This would include stats such as magazine size, total ammo, reload speed, damage, etc.	Allow for weapon modification via attachments.	Allow for visual weapon customization.	Add more weaponry.
Enemies	Basic melee and ranged opponents (animation not required) that can traverse, track, and attack players.	Include all enemy types (animation not required) that can traverse, track, and damage players.	Add AI so that the enemies operate differently.	Add behaviours to the AI so that they respond to situations and abilities.	Add a wider range of enemies, perhaps including human 'marauder' groups.
Interactions	UI screens within environment that can be interacted with.	Functioning objectives.	Fully fleshed out minigames.	Fully dynamic spawning/hazards.	Add more types of minigames.
UI	Health/Compass.	HUD.	Inventory and weapon modification.	Menu/Mission select.	Add an interactable overworld for mission navigation/selection.
Progression	Items can drop.	Items can drop in differing rarity/stats	Items can be equipped.	Items have dynamic effects.	Add the option to unlock additional characters, gear, or abilities.

Game World

Characters

'Overlord'

A faceless character leading the resistance, this will be the NPC that offers the players different missions in the overworld, and narrates/guides the players through their objectives once in-mission. This character fulfills a similar role as [The Council Spokesman](#) in the XCOM series, and is the group's only 'outside of pod' contact.

Vendors

Three of the playable characters in the game will serve as NPC vendors for upgrading and customizing gear and consumables. This will further strengthen the 'pack' mentality of the group, and allow for the recycling of assets while encouraging customization in an immersive manner.

- Survivalist (camouflage/visual customization); sells paints and patterns for the player's weaponry, in addition to uniforms for the different characters.
- Gunsmith (weapon modifications); sells weapon upgrades and attachments.
- Biochemical Scientist (consumables/ordnance); sells healing and offensive gadgetry.

Story Synopsis

As highlighted in the introduction, the player takes a role as one of the five playable characters in a squad that is fighting back against an alien threat in guerilla warfare. The players will complete missions in an attempt to recover technology, information about the aliens, and disrupt alien control.

Gameplay

Structure

Players have an alert for a mission type appear on their overworld, they can then select the mission. They may choose additional modifiers such as 'Realistic' (where players cannot revive, have a disabled HUD, have friendly fire enabled, and use the real-world ammunition system, but obtain 50% increased loot), and see a briefing of the objectives. The players then load into a mission and must navigate through the randomized tiles of each chunk to find and complete their objectives, and then leave the level.

Each mission would have two objectives and three minigames incorporated across 20 tile chunks. The different obstacles will limit the speed at which the players can progress, where minigames can be defeated as fast as characters can complete them, while objectives must be fully completed in order for players to move forward. After each objective completed, players would be revived (if killed) and receive a full resupply of Ordnance and Ammunition (but not Consumables or Abilities). The following is a list of the objectives that may be spawned/that need to be completed;

- Annihilation; clear out all enemies in an area, which will spawn up to a certain quantity. Players can fail this mode by all dying.
- Protection; defend an object whilst it performs its task (such as downloading information, opening an area, or extinguishing a fire). The players can fail by having the objective destroyed, or all dying.
- Escort; help move an NPC or 1-3 object(s) from one point to another. The players can fail by having the objective destroyed, or all dying. If this is the first spawned objective, the players will have to bring it to the other, whilst if it's the last objective, they'll need to escort it to mission extraction. If a single object is spawned, it will be a two-handed action (IE, the player is unable to do any non-movement interactions unless they drop the object) for one character. If multiple objects spawn, it will be a one-handed action (IE, the player may use one Light weapon with a slower reload animation) for as many characters as required. If it's an NPC, it will follow the character that interacted with it most recently, using the same AI as Kamikaze but without attacks or animations, and will be immune to friendly fire.
- Escape; reach the extraction point. This is always the objective after the final minigame has been completed, and causes area heat to rise exponentially faster (see 'Chunk Breakdown'). Players can fail by all dying.

The game host will be the 'Leader' of the squad, which allows them to be the one who can interact with objectives to start the next phase (once the entire alive squad is present), and gives them the ability to kick players or abort the mission.

Gameplay Progression Flowcharts

See 'Chunk Breakdown' in 'Level Design' for full details.

Core Mechanics

Gun Combat

The largest component of gameplay, gun combat is the core of any FPS game. This feature is inherently what attracts so many players, and each weapon will provide a different experience -and each attachment allows for a slightly different experience- giving players lots of weapon content to learn and master. Each gun will have its own stats (including damage, magazine size, recoil, accuracy, etc.) and available attachments. Players will each have two of any weapon and a pistol, or one of any weapon and akimbo pistols. See 'Weapons' in 'Assets' section for full details.

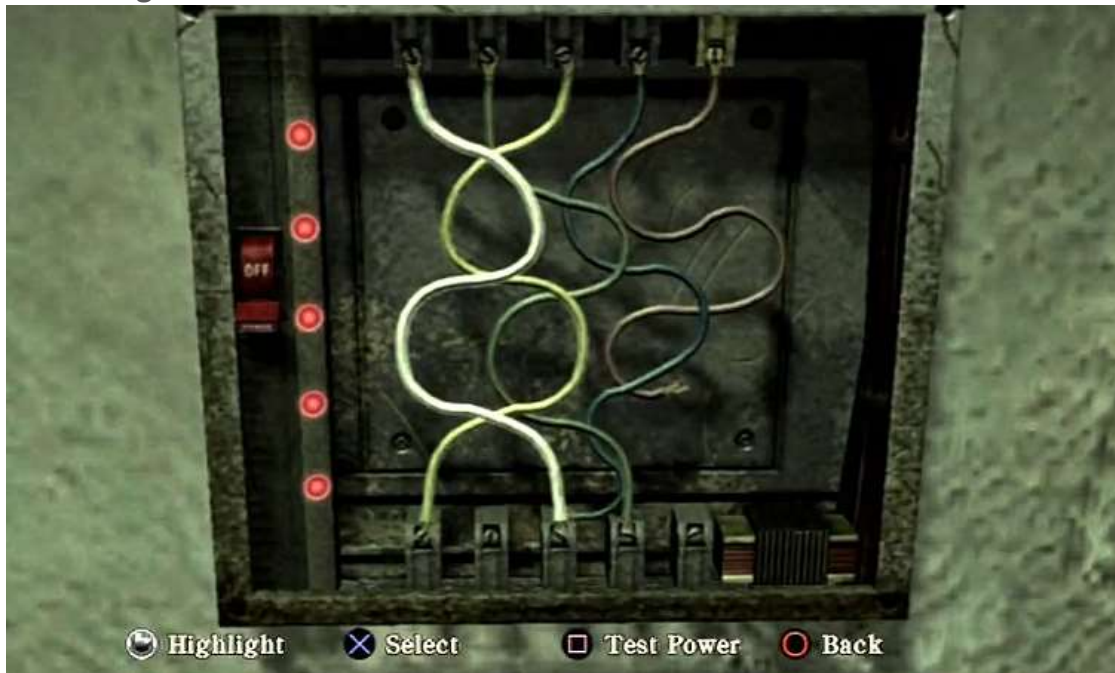
Player Abilities

Affording each player a variety of situational tactical bonuses, the abilities are designed to give the player(s) the edge for a certain time period or trade-off, increasing the power of the team at crucial moments. Abilities will need to be carefully considered, selected, and used, adding an additional tactical layer to the game. Each character will have a passive effect that is always active, and the addition of the choice of one of three unique abilities. A selected ability may function as a passive (always active in-mission, so long as the condition is met), a cooldown (giving them a single usable ability charge once every X seconds, and not resetting the timer until the ability is used), triggered (which will automatically apply to the entire affected characters, and has a use limit per mission), or targeted (which is triggered but only affects one chosen target). In addition to their abilities, each character will have a minigame benefit which provides a boost to the ease of completing a specific minigame, greatly decreasing the time needed to complete the minigame compared to a non-matching character of similar skill level. See 'Characters' in 'Assets' and the 'Minigames' section directly below for more details.

Minigames

A crucial part of the gameplay to break up gunplay, the minigames also serve as interesting puzzles to entertain players and block off immediate access to the entire map. There are five minigames currently planned, and each is accompanied below by an image of similar previous implementation to the current vision, as well as a description of the discrepancies between that and the planned version.

Rewire Minigame



Somewhat like a matching system, players would have terminals and wires that need to be connected based off of a chart on the inside of the panel door. If an incorrect connection is made, damage is dealt. There would also be neutral/unnecessary wires that don't do anything, but a correct connection would become uninteractable after displaying an effect. After all correct connections are made, the object (such as a terminal) is powered appropriately.

Tracking Minigame



Based off of a 'trail of crumbs', players must find clues in the Tracking minigame in order to find out what actions or in what direction a target headed. Clues would be things such as fingerprints, blood, and interacted objects. If players follow the wrong path or can't track the clues properly, they simply lose time or have to head in a random direction (if following a path), or look manually (if looking for an object).

Lockpicking Minigame



Based on a 'torque and pick' set, players must apply torque with one control, while navigating a keyhole and attempting to depress pins with another. Players would have to hover over a pin, and then time a hit to match a certain level of force, such as in billiards/table pool games. If the player uses too little force, the pin will need to be hit again, while using too much force consistently will break the lockpick and require the player to make another from metal in the environment.

Concoction Minigame



Based around a mixing system, the players will have to find ingredients and add them in a specific order based off of the Overlord's (seldom wrong) instructions in Concoction in order to make synthetic compounds and materials. Incorrect concoctions would waste ingredients and require a restart.

Agility Minigame



Based around physical navigation, the Agility minigame requires players to notice and path-find their environment in order to scale an area to reach an otherwise inaccessible area, such as a window to a control room to open a door. Players would be restricted to 2-D movement; side-to-side, and upwards-and-downwards. The player may find multiple dead ends, and may also (accidentally or purposefully) jump off to restart at the cost of taking impact damage.

Dynamic Maps

As mentioned multiple times in this document, dynamically-generated maps allows for increased variation in play locations and experiences for players, and helps to keep them engaged and interested, as no two missions are alike. Please see 'Chunk Breakdown' in 'Level Design'.

Customization

An important part of both the Expression aesthetic under MDA theory and the Explorer player type in Bartle's Taxonomy, customization allows for both visual and strategic appeal. Players will be able to directly modify the capabilities and handling of their weaponry via the attachment system, and will also be able to display skins and cosmetics of their preference via the camouflage system. Please see 'Cosmetics' and 'Weapon Attachments' in 'Assets'.

Marking/Ping System

An important part of any tactical shooter is communication, and this is best achieved non-verbally via an in-game marker system. Pressing the relevant input would simply highlight an object with an outline (such as an objective, hazard, or enemy) until a new item is highlighted in addition to having the character say a voice line, or leave an 'eye' symbol on a non-object location for 15 seconds. Players may also hold the key to bring a radial wheel with options such as a timer or suggested action like 'defend/move/attack'. The Leader's pings will be gold as opposed to the usual white to indicate importance.

Supplementary Mechanics**Weapon Degradation**

If resources as currency were to be implemented, a 'gold sink' drain system should also be implemented, in order to require resources after all customization is complete, in addition to increasing the value of/desire to gain resources. By offering specific disadvantages for letting a weapon deteriorate (which would primarily be decreased accuracy or a decreased fire rate), players must make meaningful choices with their weapons of choice, and helps to reduce the 'spray and pray' found in a lot of gunplay-centric games. As per my final free-to-play project (off of which the weapon and attachment system is also based), each weapon would decrease in quality by 1% per 10 minutes of gameplay, every 10% causes a 5% decrease in weapon accuracy and 2.5% decrease in fire rate, and weapons are destroyed upon reaching 0% durability. Repairing a broken weapon would be half as expensive as purchasing a new one, and the cost would scale with the weapon's durability.

Exotic Weaponry

Unique and rare weapons that can be picked up and used in-mission, but have limited (non-refillable) ammunition. These weapons are able to give the players additional firepower in unique circumstances -such as when being defending against a large hoard of enemies, or fighting multiple difficult ones- and break up the monotony of gunplay by simply using the weapon that the character enjoys the most. These weapons only spawn in certain chunk tiles, and offer a temporary increase in offensive capabilities for the player that picks it up.

Team Mantling

A mechanic once again depending on teamwork, this is a two-person way to climb tall objects, temporarily preventing either character from completing other actions. This will help to encourage team communication and planning so as to prevent all players from being occupied at once or a direction from not being guarded. This will primarily be used for alternative routes through tiles (such as giving a positional advantage or a quicker route), but will not block off any main areas (IE, progress is not prevented if there is only one player alive).

Environmental Hazards

Serving as an additional threat to players past the enemies, environmental hazards can randomly spawn in that will affect targets near it and serve as an additional consideration during combat. These can consist of electrical hazards (from electrified grates, puddles, or other metal surfaces) which will freeze the player's movement and automatically keep the 'fire weapon' input pressed for three seconds, gas hazards (from pipes and containers) which blind the player and decrease health by 5% per second, fire hazards (from objects on fire or smoldering) which damage the player by 10% per second and prevent the player from shooting to pat out the flames for two seconds, and debris hazards (such as broken glass or metal shards) which slow down the player's movement by 25%. These make positioning and the flow of combat important, punishing unaware players, and rewarding those that can use the hazard as makeshift traps against the aliens.

Consumables and Ordnance

To give players (very brief) additional capabilities outside of their gadgets, players will have ordnance that can be launched/thrown or consumables that can be used on one's own character. These offer some situational flexibility, allowing players to heal or further disrupt the alien forces. Please see 'Consumables' and 'Ordnance' in 'Assets'.

Progression Systems

Overview

As mentioned in the 'Assets' below, the players would have six pieces of equipment that they could scavenge and equip; a 'helmet', 'chestpiece', 'arms', 'gloves', 'pants', and 'boots'. Each would be of a certain quality tier (on a seven-point scale, from -3 to +3), and the quality tier would determine the range of stats and value of the item. For armour, the negative tiers would each have a 25% reduction in stats compared to the neutral fourth '0' tier, and each positive tier would have a 100% increase in stats. Health regen would scale linearly, with a character with no armour also having 0 health regen. Each item will also rarely (~1% chance) roll a modifier that offers one of two additional effects.

Higher-quality armour (defensive values) of players will allow them to take on more and tougher enemies.

Location

Loot would be uncommonly obtained from enemies in the form of gear, and commonly drop organic components. The mechanical and technological components would be acquired by raiding alien bases and outposts, and from scavenging them from points of interest such as human military bases.

Rationale

A dynamic system with varying loot types gives players incentive to play through many missions, in order to acquire the different currencies and pieces from various sources. By having the dynamic mission system, players will hopefully have less mission fatigue from spamming the same activities. By having the different methods of obtainment, players will also have lots of different types of content to do to once again occupy their time (and allow players of different preferences/playstyles to enjoy the game).

System

Please see 'Armour' in the Sheets documentation.

Assets

Items

Armour

Determines the character's base survivability and bonuses, and is the gear primarily leveled up. Composed of a head, chest, arm, gloves, leg, and boot slot. This is the gear that is looted; see 'Progression Systems' for more details.

Weapons

The main means of dealing damage to the AI opponents. Classes include Light (pistols and submachine guns), Medium (shotguns and assault rifles), Heavy (machine guns and designated marksman rifles), and Exotic (which are special pickups, constituting of a railgun, a grenade launcher, a minigun, a flamethrower, and a sniper rifle). Every tier above Light has an additive 15% decreased handling and 6% decreased movement speed penalty. Please see 'Weapon Platforms' in the Sheets documentation.

Weapon Attachments

The main non-cosmetic form of customization, weapon attachments allow players to primarily modify the handling of their weaponry, allowing them to tailor their weapons' strengths and weaknesses to line up with their own. The different attachments available can be found in the 'Weapon Customization' tab of the Sheets documentation.

Ordnance

Thrown, launched, and deployed gadgets that allows the player small situational advantages, potentially dealing or preventing damage. Each player may carry two of one type of Ordnance. Please see the 'Ordnance' tab in the Sheets documentation for details.

Consumables

Consumables give players a one-time-per-mission bonus designed to offer convenience. Each player may carry one of one type of Consumable. Please see the 'Consumable' tab in the Sheets documentation for details.

Player Characters

Name	Systems Engineer
Description	An operator focused on efficiency, the S.E. has spent time in different electrical and design roles, giving them foresight in multiple engineering forays. They primarily offer intelligence-focused support for their team.
Passive	Elite Enemies are marked for the team when aimed at.
Ability Option 1 (passive)	Overvoltage; increase effect of electronic attachments (for instance, flashlight range) for the whole team by 25%.
Ability Option 2 (passive while alive)	Inspector; environmental hazards within 50 feet are marked automatically.
Active Option 3 (when Leader and alive)	Efficient; plot the quickest route to the next objective.
Minigame Benefit	In 'Rewire', no inactive wires are grabbed by this character.

Name	Biochemical Scientist
Description	A young optimist, the Biochemist uses custom-blended hormones to assist teammates and stall enemies, in addition to their medical training which allows them to quickly assist downed teammates
Passive	Revives teammates 25% faster, for 25% more health.
Ability Option 1 (triggered, 2 uses)	Norepinephrine; the entire team gains increased damage resistance by 25%, 25% faster run speed for 30s.
Ability Option 2 (triggered, 2 uses)	Pacify; Brainless ignore the team for 25s.
Ability Option 3 (targeted, 5 uses)	Adrenaline; increase bleed-out timer by 50% or heal a teammate by 50% when you hit them with a dart gun.
Minigame Benefit	In 'Concoct', always know which ingredient is required.

Name	Gunsmith
Description	A grizzled master-of-arms, the Gunsmith is well-familiarized with all things mechanical, specializing in weapon handling and modification. Focused on better preparing the team for their mission, the Gunsmith also keeps the pain coming with their swifter reloads.
Passive	50% faster reloads for this character.
Ability Option 1 (mission passive)	Lighten; team has increased handling speed of weapons by 25%, increased recoil by 25%. Does not affect Exotic weapons.
Ability Option 2 (mission passive)	Overcycle; team has decreased full-automatic/burst fire accuracy by 25%, increase fire rate by 25%. Does not affect Exotic weapons.
Ability Option 3 (mission passive)	Handloaded; increase team gun damage by 25%, decrease handling and reload speed by 25%. Does not affect Exotic weapons.
Minigame Benefit	In 'Lockpicking', have access to a bump gun which automatically raises pins.

Name	Survivalist
Description	This operator has traditionally been a loner, more comfortable with nature and their self than with others. However, extinction on the horizon has led them to band together with other survivors. They still possess some independency to tip the scales in their favour, but this also gives them greater team synergy.
Passive	May self-revive once per match, for 10% health.
Ability Option 1 (triggered, 2 uses)	Conceal; lose enemy aggro for 15s, as long as the player does not sprint or mantle.
Ability Option 2 (30s cooldown)	Snaremaster; damage and slow down enemies by 50% in an area of 5m. Only one area may be snared at a time.
Ability Option 3 (60s cooldown)	Hunter; detect all enemies within 25m for 10s.
Minigame Benefit	Environmental clues are highlighted in the 'Track' minigame.

Name	Martial Artist
Description	A CQC focused character that can temporarily boost teammates' abilities, specializing in taking reduced damage on the frontlines from melee combatants.
Passive	Take 25% reduced melee damage, break from grapples 25% faster.
Ability Option 1 (triggered, 2 uses)	Rally; teammates have 25% more endurance, 10% more speed for 30s.
Ability Option 2 (60s cooldown)	Taunt; all enemies drop aggro from teammates to prioritize the MA for 15s.
Ability Option 3 (mission passive)	Frontline; while alive in the match, the player may equip a riot shield, which will decrease frontal damage by 75%, but limit the player to one-handed actions and weaponry.
Minigame Benefit	Climb 25% faster in the 'Agility' minigame.

Enemies

Enemy Name	Role	Behaviour	Base Health	Movement Speed (m/s)	Base Action Effect
Brainless	Minion	Cautious; uses cover/terrain to approach. Will approach players and then attack via melee, and can pounce on players facing a different direction to temporarily immobilize them. Weak point (2x damage) is the mouth, which is on the front center of the creature.	100	4	10 damage via melee attacks, 20 damage via pounce.
Bomber	Kamikaze	Aggressive; will find and take the shortest route to target. Attacks the player via priming for approximately two seconds, then detonating. Weak point (2x damage) is the explosive sacks used to detonate.	50	6	25 damage via exploding.
Lobber	Harasser	Withdrawing; uses cover and backs up when targeted if within 10 feet of player. Will lob projectiles at players within 20 feet. Does not have a weak point.	200	2	10 damage, temporarily blind via projectiles.
Skitter	Hit and Run	Flanker; will attempt to attack the side/rear of players via melee, run away approximately 10 feet away to the nearest cover, and then repeats. Weak point (2x damage) is the head.	250	6	50 damage via a slow melee attack.
Cloner	Spawner	Avoidant; will always run 15 feet away from battle to hide. Vulnerable point is its inner flesh while it is spawning a Brainless, and has invincible outer flesh.	1000	2	Spawns 1 Brainless every 5 seconds, over and above the Threat Level spawns.
Juggernaut	Damage-sponge	Aggressive; will find and take the shortest route to target. Attacks via melee, and joints serve as vulnerable points while it is attacking. Invincible outer flesh.	2000	4	80 damage, knockdown via melee.
Porcupine	Long-range	Withdrawing; uses cover and backs up when targeted if within 15 feet of players, and will attack players with a slow projectile within 30 feet. Weak point (2x damage) is the projectile launcher after an attack.	500	2	100 damage, stun via projectile.

Level Design

Chunk Breakdown

Whenever a mission is launched, the map is automatically generated by the chunk system. Each chunk should take approximately 2 minutes to get through including combat. This dynamic system is done by randomly selecting a chunk, then connecting another random chunk of a certain type to one end of it. The chunk order will be as follows; Entrance, Minigame, Generic, Objective, Minigame, Generic, Objective, Generic, Minigame, Escape. There will also be four to eight hazards and one to two exotic weapons spawned, with hazards going in pathways and exotic weapons going on group-mantle areas.

Below is an image of the approximate size of a chunk (although denser/less open space), and red markers could spawn hazards whilst blue nodes could be exotic weapon spawns.



Each chunk will also have a pre-designated Threat Level which determines the complexity/enemy presence of spawns. If players stay in a chunk for more than 5 minutes, the map's entire Threat Level is raised for every additional minute stayed, and is reset upon moving two Chunks. While a Threat Level is maintained, enemies will be spawned outside of player-reachable area and path-find into the playable area such that the number of enemies is approximately maintained.

Threat	Brain	Bomb	Lobb	Skit	Clon	Porc	Jugg
1	5						
2	10						
3	10	2					
4	10	5					
5	10		2				
6	10	5	3				
7	10	3		2			
8	10	2	2	3			
9	10	2	2		1		
10	15				2		
11	15	2	2	2	1	1	
12	15	4	2	1	1	2	
13	15	5		1	1		1
14	15	5	3			2	1
15	15				2	1	1
16	15	5	3		1	1	1
17	15	6	4	3			2
18	15		4		2	2	2
19	15	10	5	3	2	1	2
20	15	10	5	4	2	2	2

The highest Quality gear that can be equipped by a squad is 6 * 7-Tier loot per person, for 5 people. As such, the highest cumulative Quality a squad can have is 210. To make it so that a maxed crew is always fighting at least Threat Level 15, every 14 cumulative Quality a group has will increase the Threat Level of an area by one level. To scale with players (who will have 75% damage reduction and almost 10% health regen per second at max quality), creatures will gain up to 400% their health and damage in a linear fashion for every Threat Level increased by a team's Quality level. As such, creatures will gain approximately 27% strength and health per 14 Quality a team has.

UI/UX

Interface References

World State/Main Screen



An overworld view that would show the playable area for mission selection by characters, with real-time events being displayed. For instance...

Mission Select



...aliens could go out for a patrol from a base, allowing for an infiltration mission at the base and an elimination mission at the patrol's location to be available.

Modification



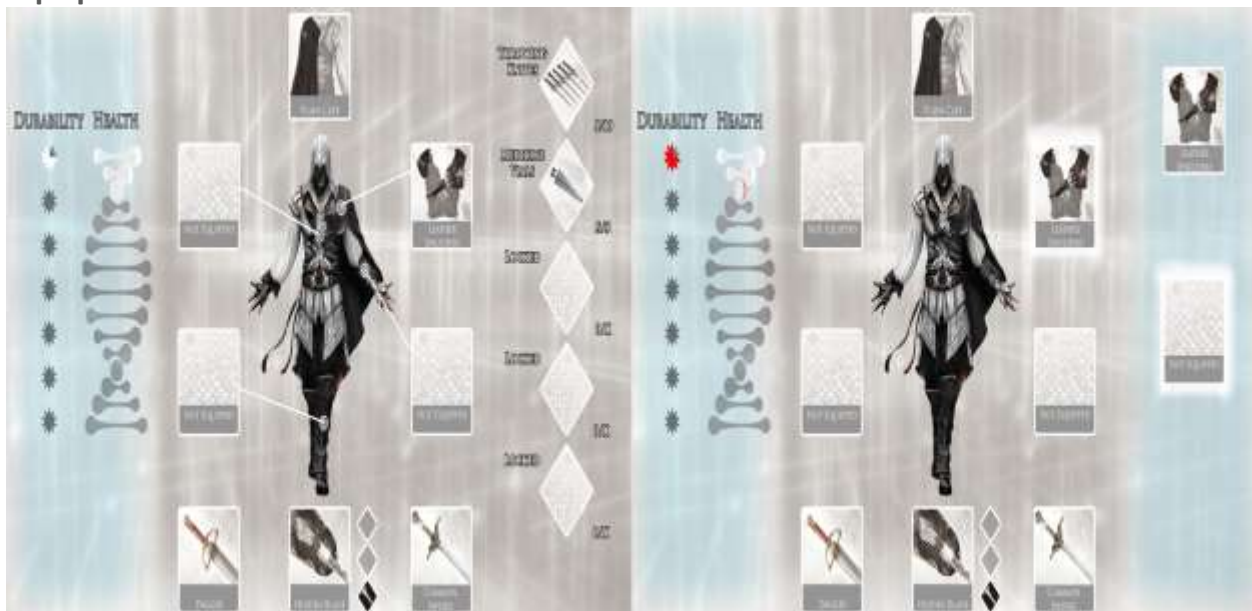
Modification would be done via 'exploded' representations of objects, allowing for the cycling of different categories and attachments. The player should be able to rotate and scale the objects to view them.

Loadout View



A quick overview for missions that allow for players to view each others' equipped gear, and the fast swap out of pre-edited weaponry, consumables, and ordnance.

Equipment View



A more in-depth equipment layout for armour and consumables, where non-weaponry customization occurs.

In-Mission HUD



The standard UI, including the health of the player and teammates, gadget quantities, an objective reminder, hotkey reminders, a threat level indicator, and an ammo count.

Diegetic HUD



A more hardcore and immersive UI experience, players would have the mission time based off of their watch (visible on the character's left wrist), direction is based off of a compass attached above the watch (on the inner wrist), the player's endurance is based off of breathing, health is based off of vision blur/red overlay, but maintain the Overlord as a floating HUD.

Mission Summary Screen Character Display



An ending screen highlighting the team's success or failure would include models of the characters showcasing their final condition after returning to base...

Mission Summary Screen Success Breakdown



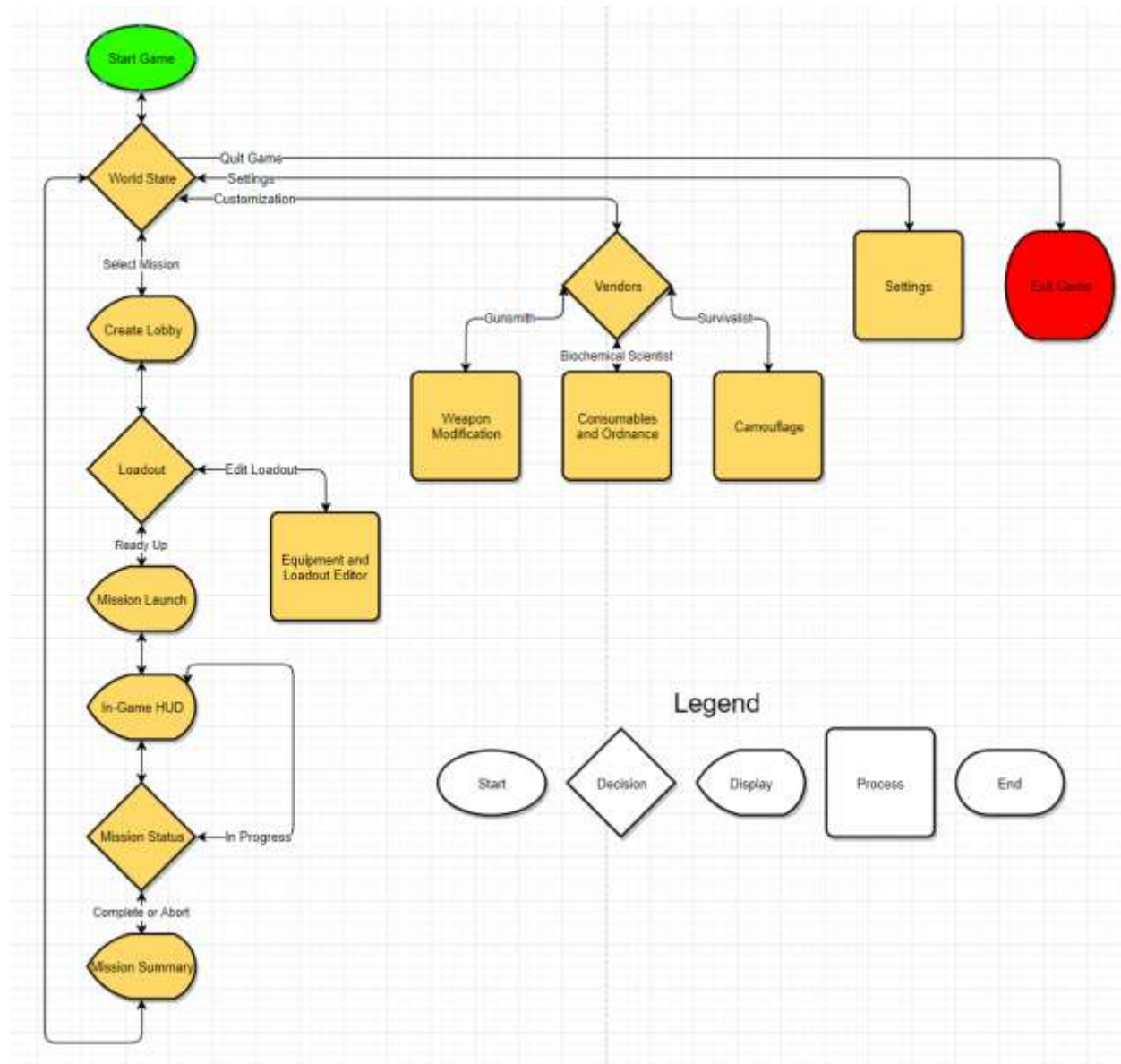
...should also include a breakdown of gains or bonuses such as no deaths...

Mission Summary Screen Stat Tracking



...and showcase statistics such as kills, accuracy, deaths, and ordnance used.

Interface Flowchart

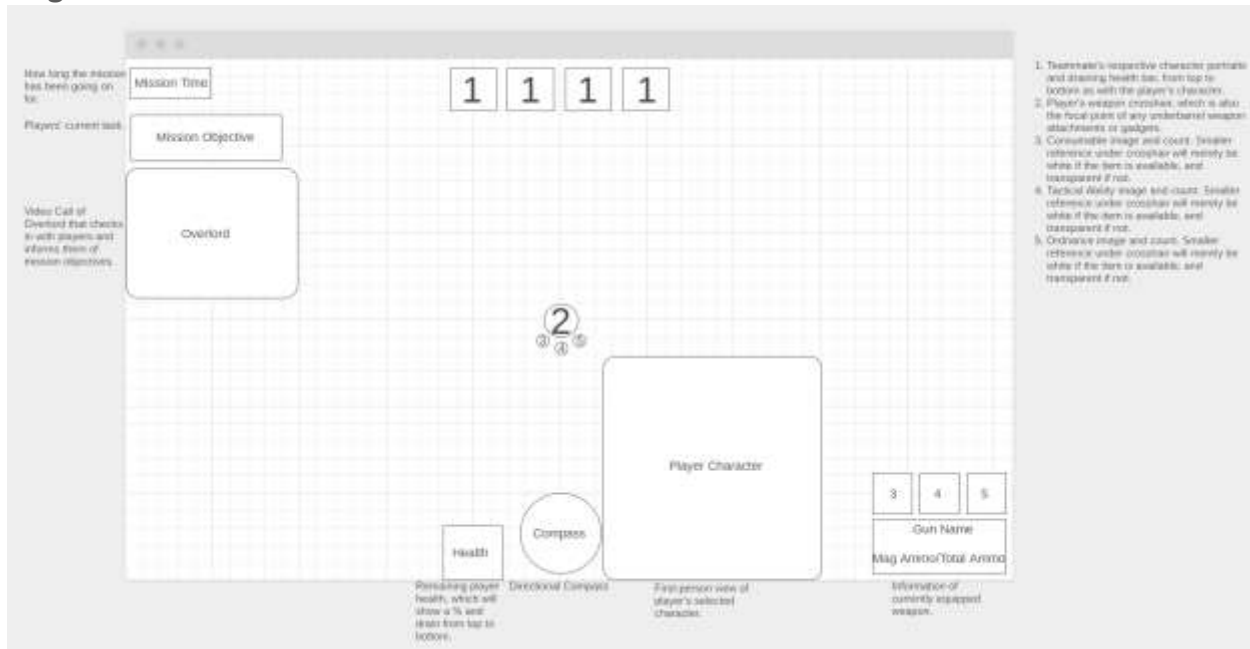


Camera

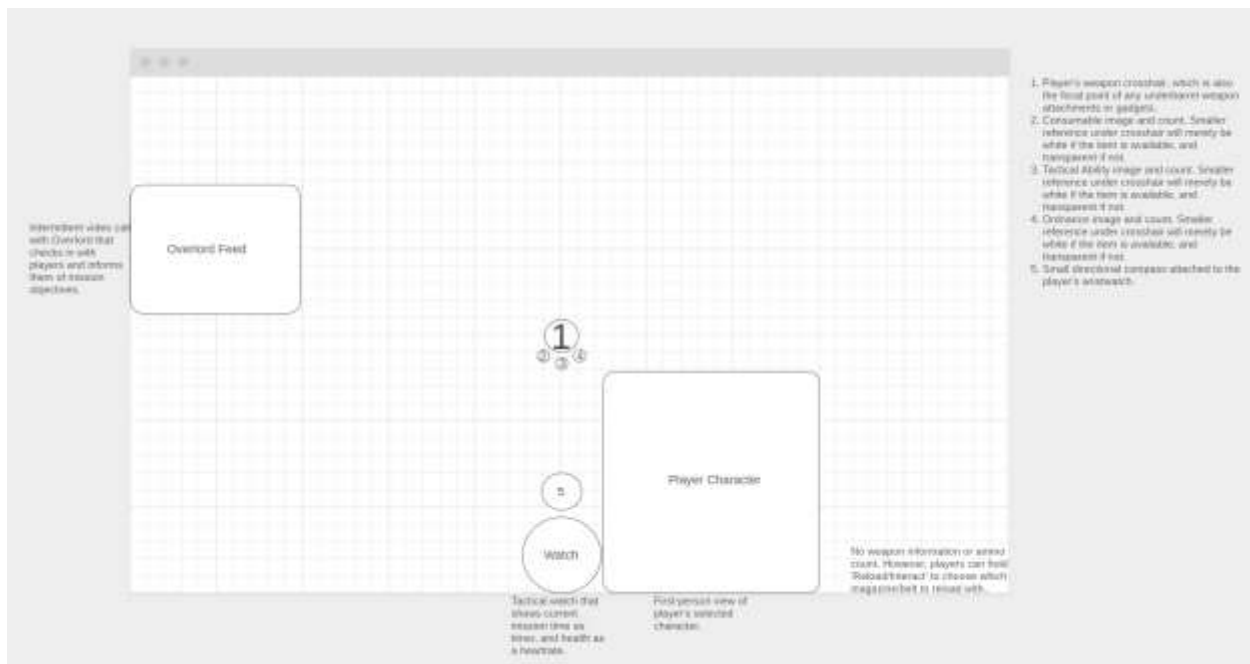
In the standard first-person placement at approximately chest-height, facing straight forward with full rotation and partial tilt control. This will allow full view and handling of weaponry, and since the game is not primarily (and holds no current plans to become) player versus player, the head/chest mismatch should not pose a problem.

Wireframes

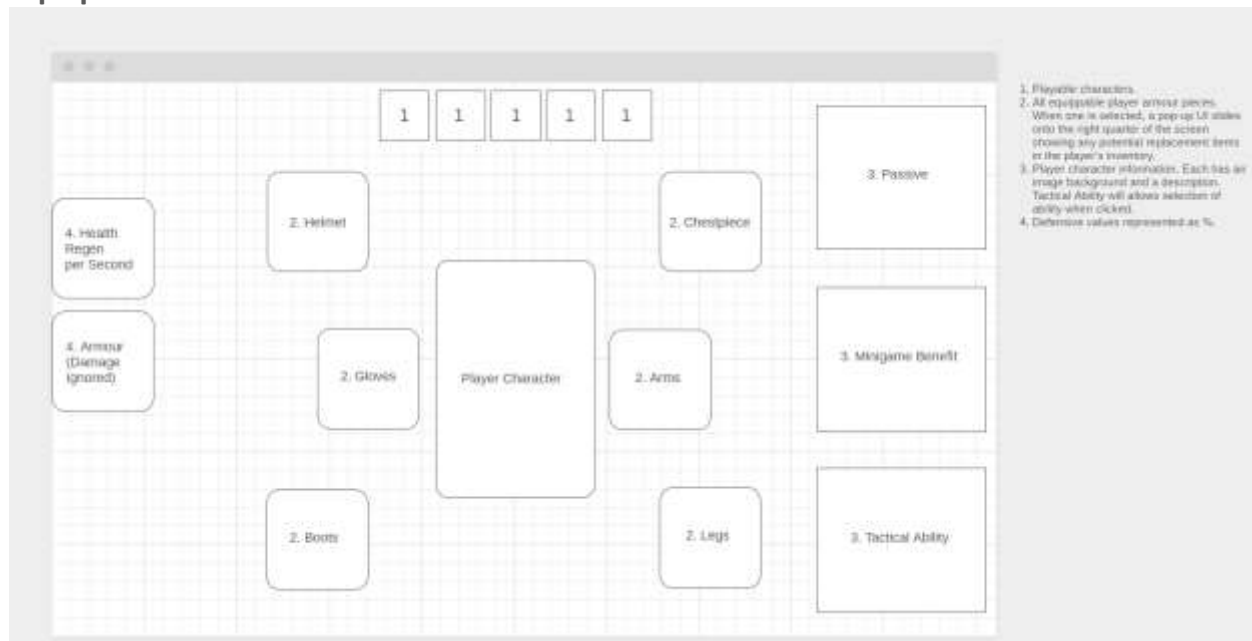
Regular In-Game HUD



Hardcore In-Game HUD

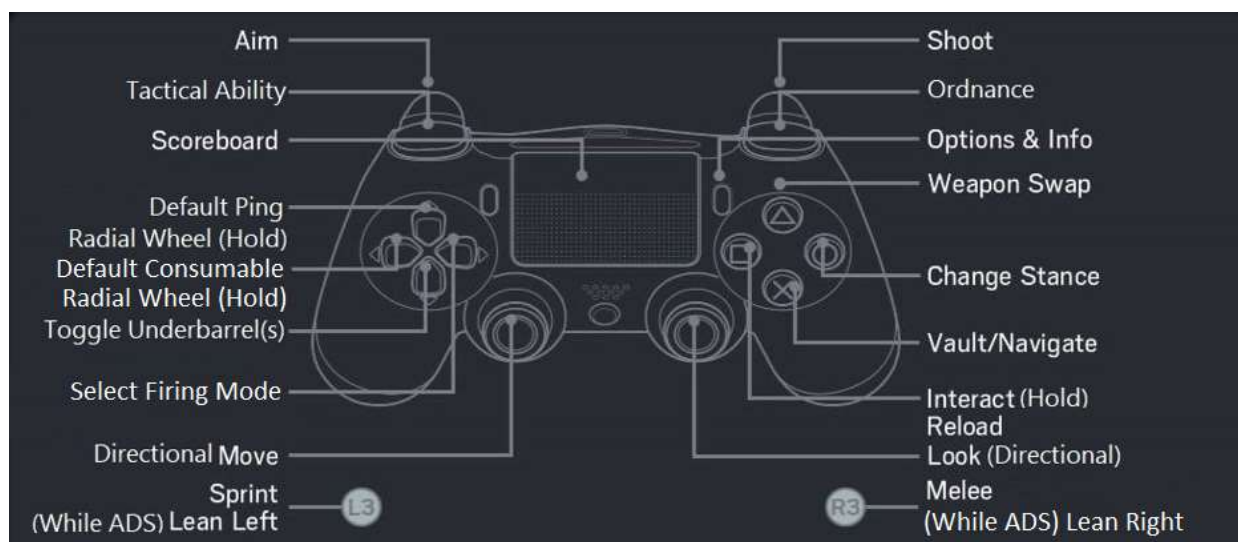
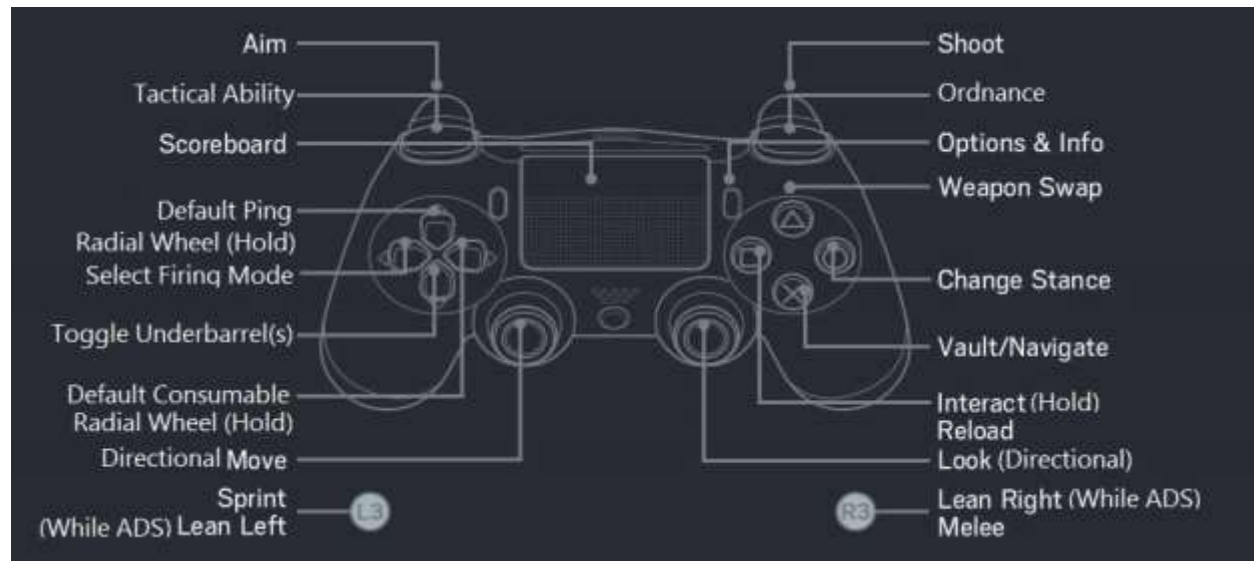


Equipment View



Physical Interface

Controls



Settings

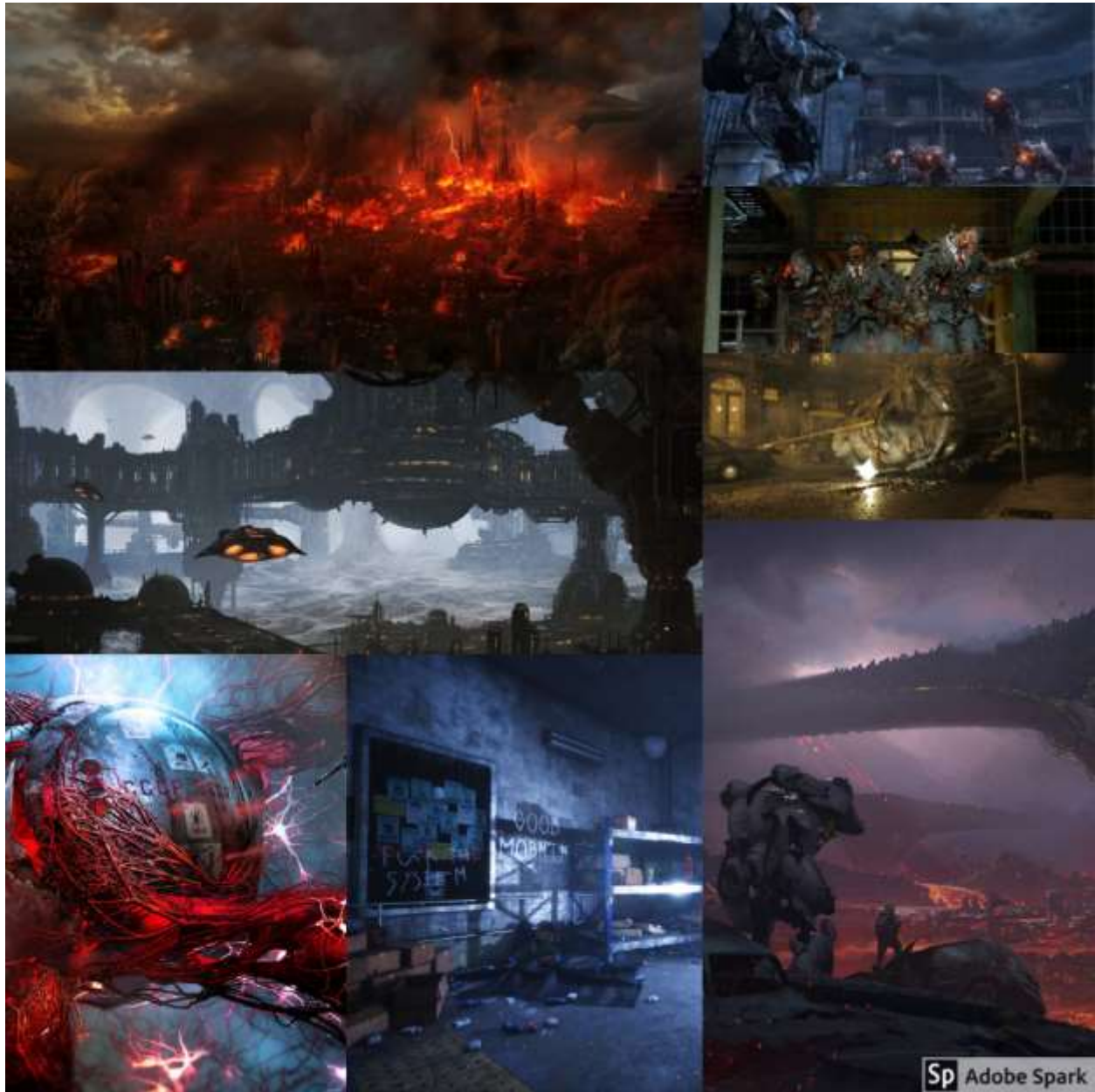
Would include the standard color-blind options, subtitle dialogue, aim sensitivity/deadzone, completely modifiable control scheme, audio balancing, brightness and screen bounds adjustment.

Feedback

There should be controller vibration in line with taking or dealing damage; whenever a gun is fired or a melee attack struck, the controller (if applicable) should vibrate, accompanied by a sound and visual effect on screen. If the player misses or is nearly hit by a melee attack or is reloading, there should be lessened vibration and different sounds/visuals. Mission objectives should be narrated by the Overlord when updated.

Art

Animation Form and Art Style



Assets Required

Asset	Used in	Required	Quantity
Character	As player characters, and as upgrade and customization vendors.	First-person gloves/weapon handling, first- and third-person animations and voice lines, third-person skins (with reskin capability for cosmetic customization) and all animations (idle, reload, item use, melee).	5
Ability Gadgets	Player special abilities	First- and third-person animations.	4
Overlord	Mission communication, game information.	Shadowed model with animations and voice lines.	1
Melee Weapon	Melee attacking.	Model and animation.	2
Gun	Ranged attacking.	Models and (shooting, reloading, aiming) animations, with and without weapon attachments.	22
Consumable Items	Miscellaneous actions in-game.	First- and third-person models and animations.	4
Ordnance	Gadget attacking.	First- and third-person models and animations.	5
Objectives	Interactable objects to progress/complete mission.	Third-person models, in un-interacted, interacting, and completed forms.	10
Enemies	Combat.	Third-person models, attack/movement/death animations.	7
'Chunks'	Map creation.	See 'Chunk Breakdown'.	10+

Sound

Audio Style

As the game is designed to be post-apocalyptic and somber, the soundtrack should be fairly 'gloomy'; low tones and a slow tempo should be prevalent when loading or navigating a non-hostile environment. When there is combat with basic enemies, the tempo should pick up and include some midtones to help the players feel encouraged, high dissonant tones should be mixed in whenever there are advanced enemies, and to juxtapose the high tones, the tank enemy should cause the music to have a more noticeable bass. This allows players to know approximately what they're up against while fighting in a fairly subtle but noticeable way.

Software Used

As I do not have very much experience with audio recording/creation, this would be best determined by the member of the team designated to work on this section. That being said, I have used Audacity to a limited extent in the past, and could potentially use it to create the ambient sounds in-game.

Otherwise, there are a few industry options available; Wwise allows for real-time editing during playtime, FMOD allows for multiple developers to work on it at the same time, Fabric is built within Unity, and AstoundSound is specifically designed for 3D sound (although it does not support Unity or consoles), which is fairly important for FPS games.

Sound Effects

Approximately 22 weapons will need firing, reloading, and handling sounds. The characters will also need voice lines/callouts for actions such as marking enemies, points of interest, reloading, and for objectives. Lines should also be added to the NPCs to inform characters of how to use their systems and provide in-game lore. Sound will also be required for the AI enemies (moving, attacking, idle, detection, death), and ambient sound should exist for interactable objects such as environmental hazards.