



# Space Traitors- Game Design Document

Updog Games: Team 9

# Table of Contents

<b>1.0 Introduction</b>	<b>5</b>
1.1 Genre	5
1.2 Platform	5
1.3 Type of Play	5
1.4 Emotional Experience	5
1.5 Mood and Style	5
1.6 Main Characters	6
1.7 Story Thrust	6
1.8 Major Goals and Challenges	6
1.9 Key Features	6
1.10 Core Audience	7
1.11 Distinctive Elements	7
<b>2.0 Narrative and Characters</b>	<b>8</b>
2.1 Setting	8
2.2 Overall Narrative	8
2.3 Robot Avatars	9
2.3.1 Brute	9
2.3.2 Butler	10
2.3.3 Chef	10
2.3.4 Engineer	11
2.3.5 Singer	11
2.3.6 Techie	12
<b>3.0 Game Progression</b>	<b>13</b>
3.1 Character Selection	13
3.2 Game Map	14
3.3 A Player's Turn	15
3.4 Corruption, AI Power and the Traitor	16
3.5 Combat	17
3.6 Winning the Game	18
<b>4.0 Game Mechanics</b>	<b>20</b>
4.1 Action Points and Movement	20
4.2 Room Types	20
4.3 Interactions and Choices	22
4.3.1 Choice Outcomes	23
4.3.1.1 Scrap	23

4.3.1.2 Corruption	24
4.3.1.3 AI Power	24
4.3.1.4 Spec Items	24
4.3.1.5 Life Points	24
4.3.1.6 Components	24
4.3.2 Choice List	25
4.4 Spec Scores	26
4.4.1 Starting Scores	27
4.4.2 Effect of Corruption on Spec Scores	28
4.4.3 Spec Items	29
4.4.4 Spec Challenges	30
4.4.5 Combat	31
4.5 Player Abilities	34
4.5.1 Character Abilities	35
4.5.2 Corruption Abilities	36
4.6 Traitor and AI Mechanics	36
4.6.1 Power Surges	37
4.6.2 Selecting a Traitor	38
4.7 Escaping the Ship	39
<b>5.0 Game Flow</b>	<b>41</b>
5.1 Game Loop Diagram	41
5.2 Gameplay Storyboards	42
5.2.1 Launching and Character Selection	42
5.2.2 Character Movement and Interactions	43
5.2.3 Power Surges and Traitor Selection	44
5.2.4 Combat	46
5.2.5 Traitor Victory	48
5.2.6 Non-Traitor Victory	49
5.3 Room Map	51
<b>6.0 Artistic Style</b>	<b>52</b>
6.1 Overall Style	52
6.2 Environment Design	52
6.3 User Interface Design	53
6.4 Character Design	54
<b>7.0 Appendices</b>	<b>57</b>
Appendix 1: Major Game Components	57
Appendix 2: Asset Breakdown	60
Appendix 3: Project Timeline	63

Appendix 4: Additional Ideas and Possibilities	64
Component Manufacturing	64
Passive Abilities	64
Spec Item Trading	64
Map Obstacles	65
Traps and Hazards	65
End of Turn Effects	65
Additional Rooms and Randomised Map Structure	65
AI Features Gained Through AI Power	65
Voice Lines	65
Unique Combat Animations	66
<b>8.0 References</b>	<b>67</b>

# 1.0 Introduction

## 1.1 Genre

Space Traitors is a hybrid cooperative/competitive party game within a sci-fi setting. Space Traitors takes heavy influence from board game design, utilizing elements such as a game board, player pieces and prominent elements of chance. The game also takes on traitor mechanics from games such as Betrayal at House on the Hill and One Night: Ultimate Werewolf.

## 1.2 Platform

Space Traitors is a hybrid platform game, with the play board being expressed on a PC and player interaction with the game being through mobile devices. The use of mobile devices provides players with an easily accessible input device and allows for information to be kept private for each player.

## 1.3 Type of Play

Space Traitors is a multiplayer game, where each player takes control of one of the 6 playable robot avatars. The specific number of players varies between 2 and 6, with game rules changing to suit the various player amounts. The ideal player experience is designed for 4 players.

## 1.4 Emotional Experience

Players of Space Traitors are intended to feel a sense of cooperation and teamwork as they work together to complete their goal, however also with a sense of unease and mistrust, with the constant threat of their companions turning on them as the AI gains power.

## 1.5 Mood and Style

The mood of Space Traitors is meant to be fun and charming, a great deal of which is because the robot's designs are to be humorous and highly characterised. This helps reinforce the game as a party game since it does not take itself too seriously. The artistic style of the game also plays into this as it is cartoony, vibrant and bright, allowing the player to feel more comfortable while they are playing.

## 1.6 Main Characters

The main characters are the robot avatars the player controls, each of which was a crew member aboard the ship and comes with a unique personality and visual style. The other main character is the rogue AI Captain which controls the ship, which is attempting to turn the robots against each other.

## 1.7 Story Thrust

In Space Traitors, the player robots are aboard the futuristic cruise ship, The Eden, which has been abandoned after the AI captain aboard became corrupted, causing it to look for a “best” friend. The AI wants to turn the robots against each other and allow one to prove itself to be its “best friend” by having it eliminate the other robots. The robots, not wanting to be forced into such an outcome, are attempting to escape by repairing the escape shuttle on board the ship, requiring them to find components in order to repair the ship. The AI however is working against them as they do this, using its power to influence and corrupt the robots, forcing them to compete in its “game” and prove themselves to be its “best friend”.

## 1.8 Major Goals and Challenges

The major goal of the players in Space Traitors is to gather components in order to repair the escape shuttle and leave The Eden and the rogue AI behind. Player goals change if they become the traitor, requiring them now to work with the AI and against their fellow players, their objective switching to eliminating the other players. Some general challenges which apply to both goals include lack of resources or items, the potential to fail spec challenges and the threat of other players attacking them, including the AI eventually. Challenges to completing the cooperative goal include players becoming controlled by the AI and having to find the components. Challenges to completing the competitive goal are non-corrupted players escaping and fighting back against them.

## 1.9 Key Features

The key features of Space Traitors are its board game like experience, its hybrid platform play-space and the evolving traitor element. The design of Space Traitors is similar to a board game, with the players having pieces which move around a board and are required to complete various challenges in order to win. An additional key feature is the hybrid platform play-space. This feature means the information presented to the players can be kept within a public space (on the main screen) or a private space (on the player’s phones), allowing for player’s to hide the fact that they are a traitor. The final key feature is the evolving traitor element. This feature provides a way to change up the

gameplay and provoke interest in the player, since one of their own can turn against them at any moment. The traitor provides an active threat to the players and pushes them to complete their objective as fast as possible.

## 1.10 Core Audience

The core audience of #TITLE are social players looking to engage in gameplay that allows friends to be easily involved, with these players tending to be already familiar with other similar party games like Jackbox and Mario Party. This audience looks for an experience that is easy to set up and needs little explanation for new players to join. Space Traitors fulfils these needs as it removes barriers for entry like all players needing to be familiar and experienced with traditional game setups. By using an interface the audience is familiar with, their phones, and allowing some of the more complex elements of board games to be handled by the game, the gameplay process is simplified and creates a more casual gameplay experience. The key age demographic of Space Traitors is teenagers and young adults (17 - 24), although Space Traitors is still accessible to both older and younger groups.

## 1.11 Distinctive Elements

The distinctive elements of Space Traitors are the evolving traitor element and the characterisation of the robot avatars. While a lot of games incorporate a hidden traitor element, Space Traitors makes this system more interesting by having the selection of the hidden traitor be dependent on the player's actions throughout the game rather than arbitrarily or randomly choosing, providing a more meaningful experience to players who become traitors. Another distinctive element is the characterisation of the robots. The design of the robots is intended to be highly unique and characterised, so that people who see them recognise what game they are from. The fun and humorous design of the robots will also provide an innate draw for people to play.

## 2.0 Narrative and Characters

### 2.1 Setting

Space Traitors is set in a science fiction future, where humans have gone into space and are travelling throughout the galaxy. Some of the richer clientele of this future often go onboard fantastical holiday cruise ships which travel the stars in style. Space Traitors is set aboard one of these, The Eden, however it has long been abandoned, following an incident with the AI Captain. The ship is now floating inoperable in space with only its AI crewmates and captain left aboard.

### 2.2 Overall Narrative

Several years ago, the AI Captain in charge of the The Eden became corrupted due to a malfunction during a power surge. It began to act strangely and began requesting the passengers aboard fight to prove themselves and show that one of them was its “best friend”. Frustrated, the humans shut down the ship’s systems and were picked up by another nearby ship. Up until now, the AI and its robot crew have remained inactive, floating through space. Suddenly, a solar flare hit the ship and caused an electrical surge, providing power to the ship. This caused the AI and the remaining robot crew to wake up, as such beginning the story of Space Traitors.

Despite its inactivity, the AI is still broken and is looking for its best friend. Since there are no humans left, it has chosen to look among the robot crew members. The robot crew (the players), have realised that their captain is broken and that they need to leave or else they themselves may be corrupted by the same error. However the escape shuttle was rather carelessly used as a joyride by many of the previous passengers and was never repaired before the humans left. As such, the robots need to break down The Eden to gather the components required to repair the escape shuttle.

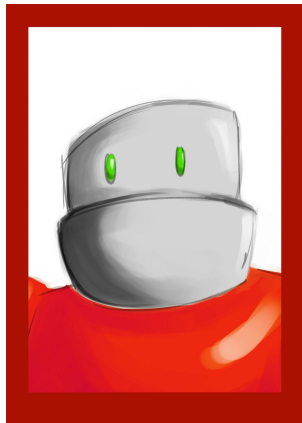
However the AI is not going to let them go that easily. Having been powered up as well, the AI slowly is trying to regain control of the ship. As it does, it is able to force its way inside the crew’s systems, corrupting their code and influencing them to play its games. If a robot becomes too corrupted, it becomes under the control of the AI and is now looking to prove itself to be its best friend. As such, the corrupted robots turn on their companions, no longer seeking to escape from the paradise provided by their new master. If the robots do manage to escape however, the AI turns on its new servants and destroys them, their failure to eliminate the other crew-mates showing that they could never be its “best friend”.



## 2.3 Robot Avatars

When players begin a game of Space Traitors, they are able to choose to play as one of the six robot crewmates that are aboard The Eden. Each robot has its own role aboard the ship as well as unique character model and colour associated with it. This model appears on the game map and in the character selection screen, while the colour outlines their model and player cards. Each robot is explained in more detail below.

### 2.3.1 Brute



**Description:** Loveable Brute

**Colour:** Red

**Attributes:** Daunting but endearing

**Purpose:** The Brute is the main source of strength aboard The Eden and was used to subdue rowdy guests. However customer feedback reported that the original version was too cold and cruel, so they gave it a loveable attitude to make it more endearing; problem is they may have gone too far and it didn't end up doing its job that efficiently. For the most part, clients just stand it around to be a large daunting figure.

### 2.3.2 Butler



**Description:** Snooty Butler

**Colour:** Purple

**Attributes:** Stuck up but skilled

**Purpose:** The Butler was the crew member which had the most interaction with the passengers aboard The Eden, being used as waitstaff and bartender. It's personality is that of a caricatured version of a butler, being very arrogant and snooty. Despite this supposedly negative attitude, customer feedback is quite positive about him, most finding it quite funny in its arrogance.

### 2.3.3 Chef



**Description:** Skilled Chef

**Colour:** Yellow

**Attributes:** Aggressive and precise

**Purpose:** The Chef is the key manager of the kitchens aboard The Eden. Extremely efficient and precise, the Chef is designed to run its kitchens down to the tee. Its design doesn't allow for that much charisma and most customer

reviews report that it is too overbearing, although they still enjoy the food it produces.

### 2.3.4 Engineer



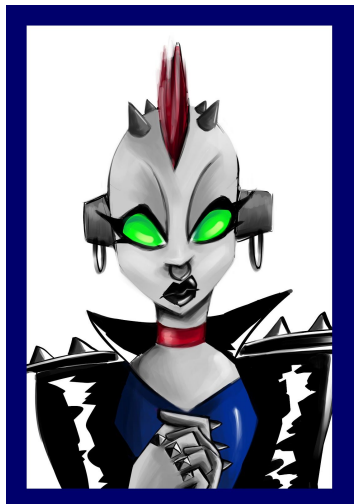
**Description:** Rough Engineer

**Colour:** Orange

**Attributes:** Laidback and dry

**Purpose:** The Engineer works to maintain the engines and mechanical systems aboard The Eden. It is often seen laying about and is interpreted as lazy, although the ship always seems to be running at full efficiency. Most reviews also note that they find its dry sense of humour quite grating, although the personality continues to persist with each subsequent model.

### 2.3.5 Singer



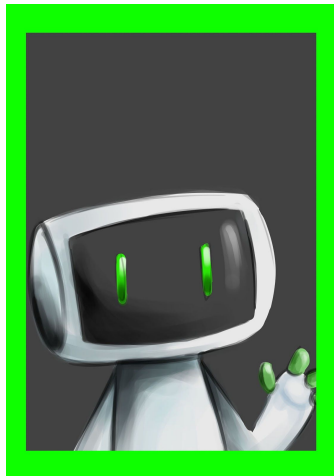
**Description:** Punk Singer

**Colour:** Blue

**Attributes:** Confident and Stylish

**Purpose:** The Singer was designed to entertain the guests aboard The Eden with music from the punk/metal genre that has taken off in the future. While its appearance is quite intimidating, it is extremely charismatic and likeable, its confidence further boosting those attributes. It also works super hard to maintain its sense of style- even when no-one is left around to appreciate it. The reviews are overwhelmingly positive for the Singer, although no-one mentions if its talents are as useful when an egomaniac AI tries to corrupt it and turn it against the other crew-mates.

### 2.3.6 Techie



**Description:** Clumsy Techie

**Colour:** Green

**Attributes:** Technically adept but clumsy

**Purpose:** The Techie helps maintain the computers and technical systems aboard The Eden. While extremely proficient at managing these systems, it is very clumsy and has often caused significant messes due to its awkwardness. However most customer reviews are able to forgive it for this since it is rather cute, even in its clumsiness.

## 3.0 Game Progression

A game of Space Traitors works much like a board game, with each player performing various actions on their turn until all players finish their turns, ending a round of play. Play continues like this until one of two conditions are met: the non-traitors repair the escape shuttle and flee or one traitor has eliminated all other players. A more detailed explanation of how gameplay progresses is explained below:

### 3.1 Character Selection



**Figure 1:** TV Display of Each Player Selecting their Character

After all players have joined and play begins, players are presented with the character selection screen. Each player is listed left to right in the order in which they select their characters, as in Figure 1. On their phones (Figure 2) the players will be able to see a list of all the characters across the top of the screen and their statistics. Even if it is not their turn to pick, they can look through each of the characters, although the confirm button is disabled if it is not their turn to pick. If a character picks a particular avatar, no other player can choose that avatar for that game. Once all players have picked their character, the screen changes to display the level map and the game begins.

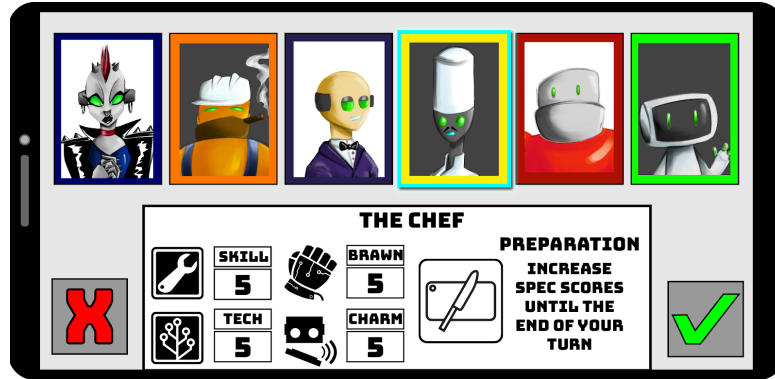


Figure 2: Player Selecting their Character on their Phone

### 3.2 Game Map

Once all players have completed their character selection, they are presented with the main game interface. On the main screen, they can see the level map, a display of each player in the game and the total AI power (currently at 0), as in Figure 3. The level is a display of The Eden, divided into rooms connected by paths or corridors. The players start in the escape shuttle bay, where they have to return the components to win. A room is depicted as a few 3D models laid on top of a textured plane, which surround a central node icon. When player's move into a room, their 3D character models will stand next to the node in that room.

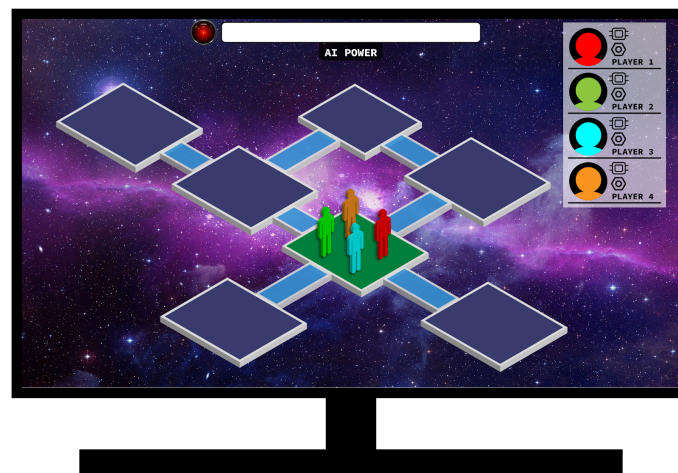


Figure 3: Game Map when Players Begin the Game

Players can also see the layout of the rest of the map, however the details of the map, such as the room models and the available choices are hidden to them. As players move around the map, the rooms and the available choices will be revealed to all players, as they attempt to find resources and the components required to win the game.

### 3.3 A Player's Turn

Player's take their turns in an order reversed to the order they selected their character's in. Thus, the first player to take their turn will be the last person who picked their avatar. On each player's turn, they first decide if they want to use an ability or not, as in Figure 4. Since abilities cost scrap, they are intended as mid to late game support tools. This restriction also means players are not gaining an immediate boost from the beginning of the game.

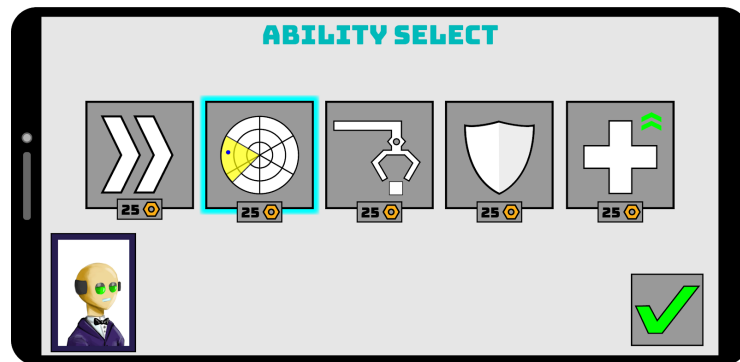


Figure 4: Ability Selection Screen

They then roll their action points for their turn. Once they have done this, they are shown a map of the rooms they can move to with their action points, as well as having the rooms highlighted on the main screen. The player can then pick which room they would like to move to using the interface in Figure 5 and their character's figure will move along the relevant paths towards it.

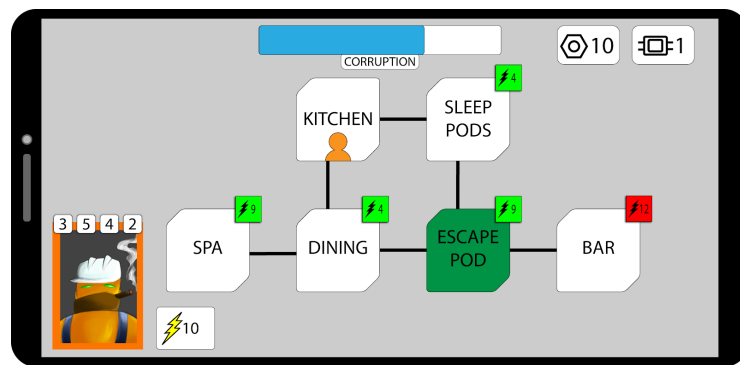


Figure 5: Room Selection on Phone

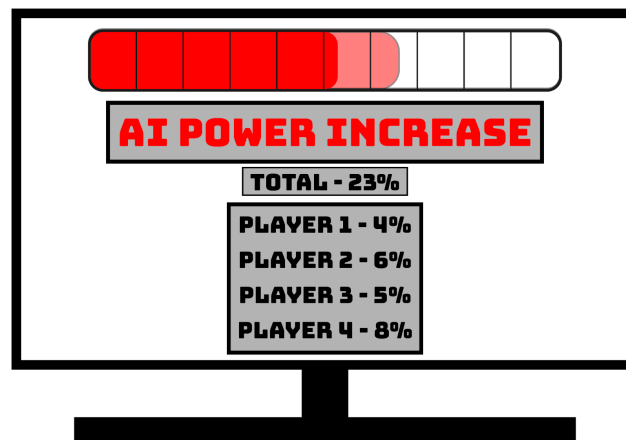
When the player arrives in the room, the room is revealed to them if it wasn't previously. Their phone also provides a 2D image of the room and its contents, with 2 buttons on the image indicating what they can do within the room. These interactions can be selected to get more detail about what the interaction is as well as the effects it will have

on the player and the rest of the ship. The player can either choose one of the interactions, or pass if they don't want to choose any of them. If they choose one, its effects take place immediately and then their turn ends. Certain interactions may also present a spec challenge, which presents a random chance of failing or succeeding on the interaction. The other players do not know what the player did in that room, unless they choose to tell them. The game then moves onto the next player's turn and the above steps are repeated again. This gameplay loop of exploration continues for the rest of the game, as players attempt to find materials to make them stronger as well as find the components needed to escape. However this task is made more difficult and interesting when traitors begin to emerge.

### 3.4 Corruption, AI Power and the Traitor

As player's explore the ship and gather the resources needed to attempt their escape, they will gradually build up a percentage value called corruption. Corruption is a representation of how much power the AI has over a particular player. Each player is presented with their corruption separately on their phones, so players don't know how much power the AI has over the other players.

AI power is another value that will build up over the course of the game. This value is a representation of how much control the AI is gaining over The Eden as it continues to power up. AI power is shown to the players at the top of the screen, so is known by all players. This value increases every round in events known as power surges, which occurs after all players have completed their turn. During a surge, players are shown how much the AI Power has increased this round, as in Figure 6. Players are also shown which players caused the AI Power to increase the most.



**Figure 6:** Power Surge on Main Screen

As play continues, the AI Power represents the chance that someone is selected to be the traitor and is now working for the AI. Since the AI Power increases every round, the



chance of someone being selected is slowly increasing as game play continues. If a traitor is selected, a random non-traitor is picked to be that traitor, with players with high corruption being more likely to be so. Once a traitor is selected, they remain under the AI's control for the rest of the game and can no longer work toward escaping. This selection can happen multiple times throughout the game so there can be multiple traitors that appear throughout the game.

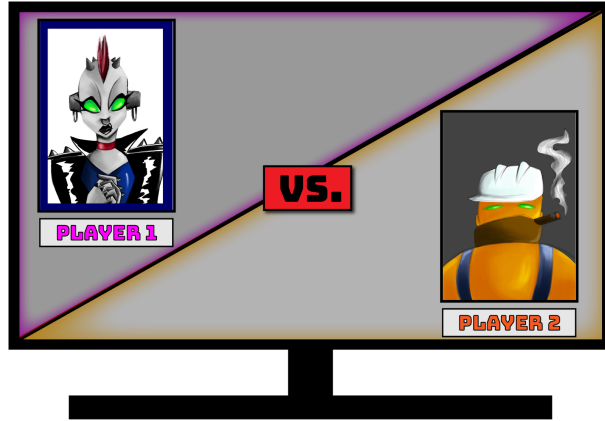


**Figure 7:** Player Being Made Aware They Are the Traitor

When a player becomes a traitor, only the selected player is aware that they are the traitor; the other players do not know. The player is made aware they are the traitor by a display on their phone (Figure 7), making the information private. This allows the traitor to subtly make moves against the players and build up power before attacking. Once a player has become a traitor, they can no longer contribute to the cooperative goal of escaping, and their goal flips to eliminating all the other players. The traitor continues playing the game as they have before now, however with the option of attacking other players to eliminate them from the game.

### 3.5 Combat

In order to eliminate other players, the traitors can fight them through a combat system. If they enter a room containing another player, they are given a special interaction to attack that player. If they choose to do so, combat begins and the two characters fight. Whoever wins the combat is determined randomly based on each combatants spec scores, with some element of counter play through the user picking the spec they want to use in the combat.



**Figure 8:** Players Shown Fighting on the Main Screen

The winner of the combat is then displayed in their win animation. They are also able to steal one item of their choice from the loser, whether that be a component or a spec item. The loser of the combat is penalised by losing one life point, of which they have three. If a player loses all of their life points they are eliminated from the game.

### 3.6 Winning the Game

The goal of players in Space Traitors is dependent on whether the player is a traitor or not. For non-traitors their primary goal is the same throughout the course of the game: finding the components and escaping The Eden. However with the addition of traitors an additional goal of surviving is also introduced to add challenge to their task. For traitors, their goal is to find all the other players and eliminate them. Within this, they should still feel the need to explore the ship and find interactions which help make them stronger, although this is more of a secondary goal now, as opposed to when they were not the traitor.



**Figure 9:** Win Screen for the Traitors

Once a player is eliminated, either as a traitor or non-traitor, they have lost the game and can no longer participate. If the last player alive is the traitor, then they win the game and the game ends (as in Figure 9). If the last player alive is not a traitor, then they can still

attempt to escape the ship (since they can never become the traitor), although eliminating the other players will still provide them with a victory. For the cooperative goal, if the non-traitors manage to collect all the components, install them on the escape shuttle and get all non-traitors on board, then they win the game (as in Figure 10) and the game ends with the non-traitors fleeing The Eden, leaving the AI and the remaining traitors aboard. If the non-traitors win in this manner, then any traitors left aboard lose the game.



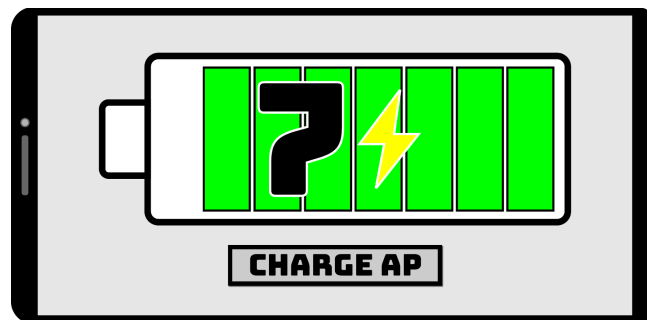
**Figure 10:** Win Screen for the Non-Traitors

## 4.0 Game Mechanics

The following section describes in more specific terms each of the mechanics in Space Traitors that were explained in [3.0 Game Progression](#).

### 4.1 Action Points and Movement

Actions points are the resource the player spends in order to move around the map. They are determined at the start of each players turn randomly as a simulated roll of two 4 sided dice (to provide an average roll of 5 action points). This “roll” is not physically demonstrated to the player and is instead displayed by pressing the charge AP button and being generated as a random number on their phone, as can be seen in Figure 11.



**Figure 11:** Player Rolling their Action Points

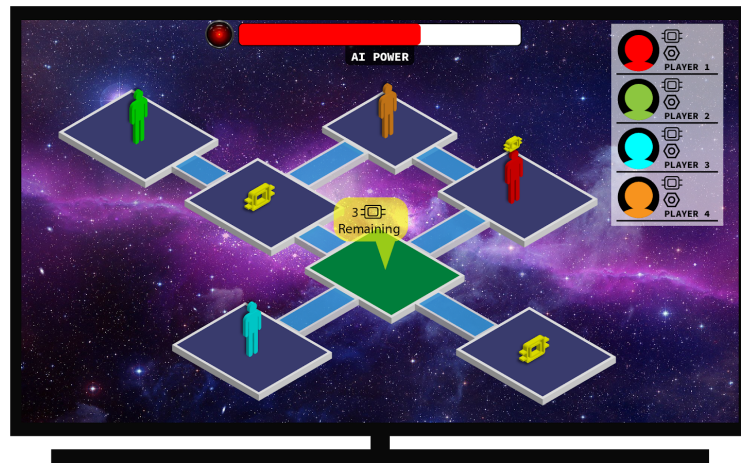
Once action points are calculated for a player, the game then determines which rooms the player can travel to based on their action points. Each path connecting the rooms has an action point cost, which the player must spend in order to move along it. The cost of each of the paths are displayed on the room map in [Section 5.3](#). If a player wants to move to a particular room, they must have enough action points to move along the shortest path to that room, otherwise that room is unreachable this turn.

In order to motivate the game’s economy, any excess action points which the player does not use are converted into scrap. This scrap granted is equal to half the player’s excess action points (rounded up). For example, if a player rolls a 5 for their action points, and then only move along a path which costs 2 points, they would be granted 2 scrap.

### 4.2 Room Types

The rooms of The Eden are laid out in a grid-like pattern with corridors forming the connections between them, which allows the players to move around and forms the level map of the game (see [Section 5.3](#) for the room map). Players move between these

rooms on their turns and interact with the room they end their turn on. The layout of the level is expressed on the main screen and thus is public to all players, as in Figure 12. The players can also see how many choices are still available within that room before they enter (although not what choices are available).



**Figure 12:** Map Display as Players Explore the Ship

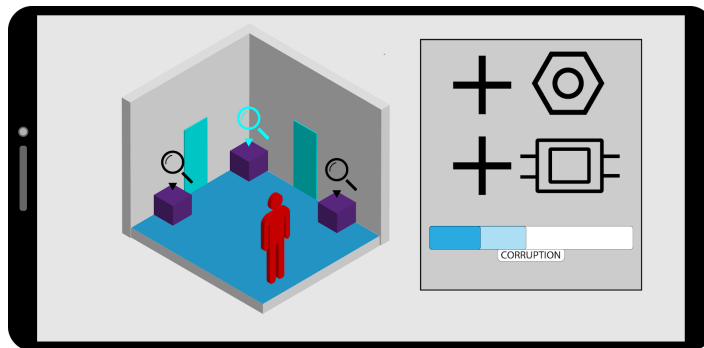
Each room aboard The Eden is not unique and can be categorised according to its type. Room types are a general description of the function that room served aboard The Eden when it was still operational. Each room type has an image and model layout associated with it, which determines what the player sees when they enter a room of that type. The room type also determines which choices can appear as interactions when the player enters a room of that type. How choices are selected for the different room types is explained more in [Section 4.3](#). The location which room types appear is the same for every game and is defined within the level map ([Section 5.3](#)), however the choices which appear within those rooms are randomised between games. Below is a table of all the different room types as well as a list of props to fit in them.

Room Name	Prop List
Room 1- Bar	<ul style="list-style-type: none"> <li>● Bar Bench</li> <li>● Stools</li> <li>● Tall Tables</li> <li>● Piano/Stage</li> </ul>
Room 2- Dining Hall	<ul style="list-style-type: none"> <li>● Dining Tables</li> <li>● Chairs</li> <li>● Buffet Table</li> </ul>
Room 3- Engineering	<ul style="list-style-type: none"> <li>● Work Bench</li> <li>● Storage Crates</li> <li>● Reactor</li> </ul>
Room 4- Escape Shuttle Bay	<ul style="list-style-type: none"> <li>● Control Panel</li> <li>● Engine in Repair</li> <li>● Toolbox</li> <li>● Space Suit Dispenser</li> <li>● Escape Shuttle</li> </ul>
Room 5- Kitchen	<ul style="list-style-type: none"> <li>● Grill/Burners</li> <li>● Sink</li> <li>● Bench</li> <li>● Refrigerator</li> </ul>
Room 6- Sleeping Pods	<ul style="list-style-type: none"> <li>● Sleeping Pods</li> <li>● Lounge</li> <li>● Clothes Rack</li> </ul>
Room 7- Spa	<ul style="list-style-type: none"> <li>● Massage Tables</li> <li>● Pool</li> <li>● Sun Lounge Chairs</li> </ul>

### 4.3 Interactions and Choices

Upon entering a room in The Eden, players are presented on their phone with a image layout of the room, as well as 2 different interaction icons placed upon the image, as in Figure 13. These choices are randomly determined for each room in the ship at the beginning of the game and remain the same for the entire duration (unless the choice is a one-off, meaning after it is disabled after being picked by a player). Although randomised, the two choices in a room cannot be the same. The room type determines which choices can and cannot appear in that room. For example, the “Repair Boxing Gloves” choice can appear in the Bar but the “Break Open Strongbox” choice cannot. A

table of all possible choices that appear in Space Traitors is attached and is explained in more detail in [Section 4.3.2](#).



**Figure 13:** Player Selecting an Interaction

The player is able to pick one of these choices on their phone, and they are awarded the outcome given from that choice. These outcomes can provide rewards for the player, but also may give a drawback. Certain choices may also require a spec challenge for the player to succeed on. If they succeed the challenge, then they gain a reward, otherwise they gain a drawback. See [4.4.4](#) for how spec challenges function. The player is aware of which rewards or drawbacks they are going to receive before they pick the choice, as well as how much they will gain or lose.

Players must either select one of the 2 interaction icons, pass their turn or attack a player. Attacking a player can only occur if one of the players involved is a traitor (see [4.4.5](#) for how attacking and combat functions). If the player selects one of the interactions, then its effects take place immediately. If they pass their turn, then nothing happens. Regardless of which action the player decides to take, once their action has been completed, their turn ends and play continues with the next player in the turn order.

### 4.3.1 Choice Outcomes

Following their selection of an interaction in a room, the player is provided with the resource changes which are associated with that interaction. The possible resources which are affected by these interactions are explained below.

#### 4.3.1.1 Scrap

Scrap is the most common resource a player can find while they are exploring The Eden. Scrap can be spent in interactions to gain rewards or can be spent to use abilities. A player's scrap value is presented on the main screen so all players know how much scrap everyone has. It is also presented separately on each player's phone.

#### 4.3.1.2 Corruption

Corruption is a private value between 0 and 100 that each player has which represents the AI's influence over that player. Each player's corruption affects the increase in AI power as well as the likelihood that they will be selected as the traitor. Corruption also scales down a player's spec scores.

#### 4.3.1.3 AI Power

AI Power is a representation of the AI's control over The Eden. As a mechanic, AI Power is the a value between 0 and 100 that represents the chance that a player is selected as a traitor after a surge. As the game progresses it will gradually increase, however this rate can be modified based on interactions a player can choose. When a player selects an interaction which effects AI Power, the AI Power increase will be modified by the amount presented in the interaction. Unlike other choice outcomes, the changes that these interactions provide to AI Power change are not permanent and only take effect in the next surge, so do not persist to surges after that.

#### 4.3.1.4 Spec Items

Spec Items are the means in which players can increase their spec scores. These appear in choices which cost a significant resource cost or as a success outcome for a spec challenge. Spec items are always one-off choices and they also cannot be lost or discarded as the result of an interaction. Unlike other one-off interactions, those which provide spec items can be reset if the player discards the item from their inventory. When they do, the item is returned to the point where it was found and the interaction can be selected again to regain the item.

#### 4.3.1.5 Life Points

Life points are a representation of how many hits a player can take. As a public value on the main screen, all players can see how many life points each player has. All players start with three life points and cannot gain any beyond that. If a player loses all their life points, they are eliminated from the game.

#### 4.3.1.6 Components

Components are the means in which non-traitors can win cooperatively. By finding all the components and returning the components and themselves to the escape shuttle, the players win the game. Components



are found in interactions dotted throughout the ship and come with a cost of corruption to reduce the likelihood that the game will resolve without any traitors being selected.

### 4.3.2 Choice List

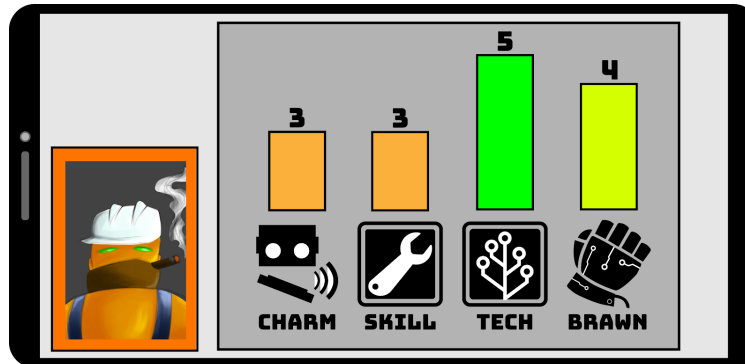
Attached in a separate document is a table which details all the choices that are eligible to appear in Space Traitors as well as their properties. An explanation of what each of the properties for each choice is detailed below:

- Name: This is the text which is displayed to the user when they are asked to make a choice in a room.
- Weighting: A floating point value that determines how much weighting the choice is given to appear in the randomisation. The base value is 1, with lower values being less likely and higher values being more likely.
- Unique: A boolean value that determines if the choice can appear multiple times throughout the ship. If this box is ticked and there is a mandatory value, there can be no more instances of the choice than the mandatory value (even if there is required to be more than one).
- Mandatory: An integer value which determines if the choice has to occur in the game and how many times it has to occur, with more possibilities being viable unless the choice is unique. If this value is 0, the choice is not required to appear.
- One-off: A boolean value that determines if the interaction is disabled after it has been selected, or if it can be selected again. When a choice is disabled it cannot be selected by any player, even if they did not select the choice. For choices which require a spec challenge, disabling the interaction only occurs after a success on the spec challenge.
- Spec Challenge: A value that can either be null or one of the four spec scores. If null it means the choice is not a spec challenge. Otherwise, the choice is a spec challenge associated with the listed spec score.
- Target Score: If the choice is a spec challenge, then this field details the target score the player needs to beat to succeed. Is null if the choice is not a spec challenge.
- Outcome: Failure: Field which demonstrates the results of a player failing the spec challenge for this choice. Field is null if the choice is not a spec challenge.
- Outcome Success: Field which demonstrates the resources changes which result from selecting this choice. If the choice is a spec challenge, this field details the results of a successful spec challenge.
- Room Types: Each room type is a column in the table with a boolean value associated with it. If the value is true for a particular room, this means the choice is available to appear in that room. If false, the choice cannot appear in that room.

- Conditional: An optional value that determines if the choice can be selected by that player or not. If the condition is not met, the choice is visible to the player but cannot be selected.

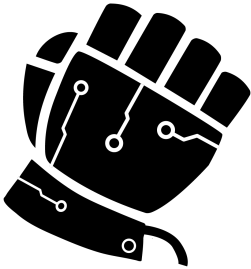

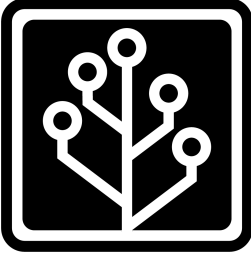
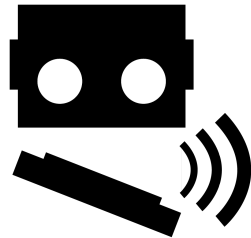
The choice list is attached to this document as a separate document.

## 4.4 Spec Scores



**Figure 14:** UI for Displaying Spec Scores

Spec scores are a representation of each robot avatar's specialisation and what they perform better or worse at. Each avatar starts with its own unique distribution of the spec scores and these scores can be modified throughout play by the equipping of spec items and gaining of corruption. Players can quickly view their spec scores on their phone as in Figure 14. These spec scores are used in interactions which require a spec challenge as well as in combat when the traitor emerges. The four scores and what they represent are explained below:

Specialisation	Icon	Description
Brawn		A measure of the robots strength and power. Used in challenges where the player has to break something open.
Skill		A measure of the robots agility and dexterity. Used in challenges where the player has to nimbly evade obstacles.
Tech		A measure of the robots intelligence and aptitude. Used in challenges where the player has to hack into the ship's computers.
Charm		A measure of the robots wit and glamour. Used in challenges to dazzle the AI or the ship's systems.

#### 4.4.1 Starting Scores

When players choose their avatar at the beginning of the game, they are presented with an array of the different spec scores for each of the avatars. This array is the distribution each avatar has in the different spec scores. Each avatar has high values in certain spec scores but are lower in others. This help informs the player's choice about which avatar they wish to play. The starting values in each score vary between 2 and 6, but the total of all the scores for all avatars is

equal to 15, so that no avatar has a distinct advantage. Below is a table for each avatar's starting scores.

Character	Brawn	Skill	Tech	Charm
1- Loveable Brute	6	3	2	4
2- Snooty Butler	4	5	3	3
3- Skilled Chef	3	6	4	2
4- Rough Engineer	4	3	5	3
5- Punk Singer	2	5	2	6
6- Clumsy Techie	2	2	6	5

#### 4.4.2 Effect of Corruption on Spec Scores

Players gaining corruption not only affects their susceptibility to becoming the traitor, but also impacts their spec scores. This is a representation of the AI manipulating their code to take control of them, affecting their ability to act clearly. A player's corruption affects all of their spec scores in the following manner. As a note this formula is calculated before increases from spec items are added on to the players spec score.

$$\text{Current Spec Score} = \text{Base Spec Score} * (100 - 0.5 * \text{Player Corruption}) / 100$$

The result of this is meant to be a whole number, rounded using standard rounding rules. Figure 15 below shows the visual display of the players scores getting reduced from their maximum as their corruption increases.

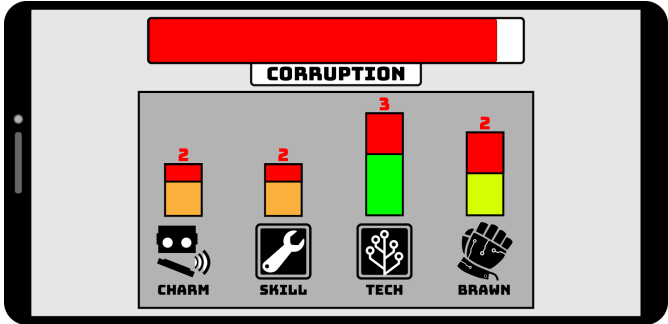
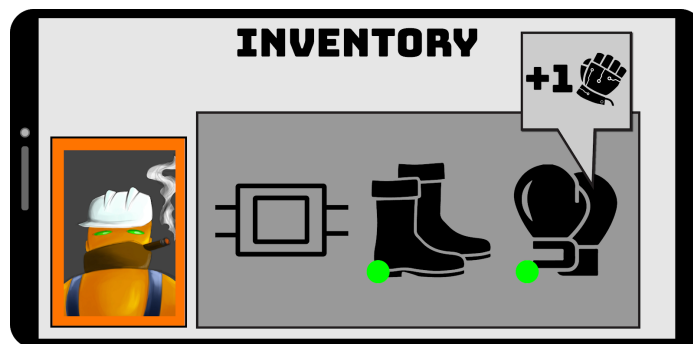


Figure 15: Display of the Effect of Corruption on Player Spec Scores

### 4.4.3 Spec Items

As players explore The Eden, they have the potential to find various spec items. These are items the players can equip to improve their spec scores. A player can carry up to 4 items at a time, however can only have 2 of those equipped at any one time. There can be multiple instances of the same item, however a player can only have one instance of a particular item equipped at a time. On their turn before they move, a player can open their inventory (Figure 16) on their phone to equip or unequip items as they see fit. They can also choose to discard their items if they want. When an item is discarded, it returns to the original interaction it was picked up from.



**Figure 16:** Player Inventory with a Pop-Up Detailing the Effects of an Item

While a player has a spec item equipped, their spec scores are increased by the amount associated with that spec item. Once a player gains access to a spec item (through any means), it automatically equips unless they already have two items equipped, in which case they are allowed to trade one of their equipped items out for the new item- they do not have to if they do not want to. If the new item the player has gained is their 5th item, they are forced to discard one of their items (this does not have to be the new item).

Below is a table listing all of the spec items in Space Traitors as well as their effects.

Item Name	Effects
Boxing Gloves	+1 Brawn
Speed Boots	+1 Skill
Robo-Brain	+1 Tech
Dazzling Outfit	+1 Charm
Fancy Glasses	+2 Tech, +1 Charm
Extra Arms	+2 Skill, +1 Brawn
Hyper Fuel	+2 Brawn, +1 Tech
Spy Suit	+2 Charm. +1 Skill

#### 4.4.4 Spec Challenges

Certain interactions require the player to perform a spec challenge. A spec challenge is an interaction where the player has a chance of failure in the interaction, as in Figure 17. Success in the challenge means they gain a reward-failure provides a drawback. Characters which are higher in the spec score associated with the challenge have a higher chance of success. For example, the Brute is high in Brawn but low in Tech, so will have a higher chance of succeeding on a Brawn Challenge than a Tech one. Not all interactions require a spec challenge, however those that do generally give greater rewards.

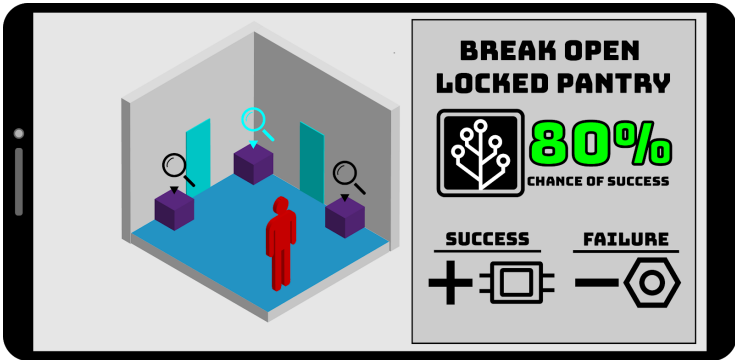


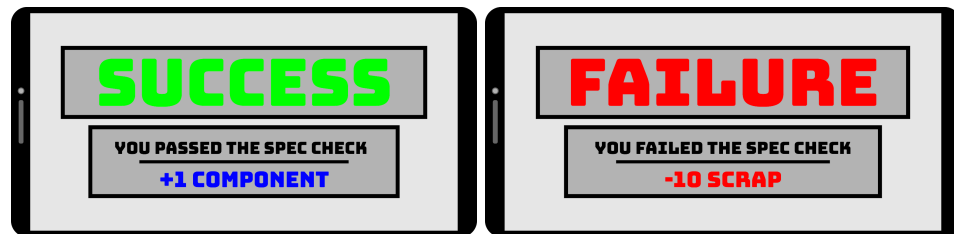
Figure 17: Display of an Interaction which Requires a Spec Challenge

An interaction which requires a spec challenge is presented to the player with an interaction icon that details the outcomes of a success and a failure in the

challenge. The player is also made aware which spec score the challenge is focused around as well as their chance of success in the spec challenge. In order to calculate this chance, the game compares the relevant spec score with the challenge's target score, a predetermined value associated with that particular spec challenge. The chance to succeed is calculated as follows:

$$\text{Chance to Succeed} = \min(100, 50 + (PS - TS)\frac{50}{TS})$$

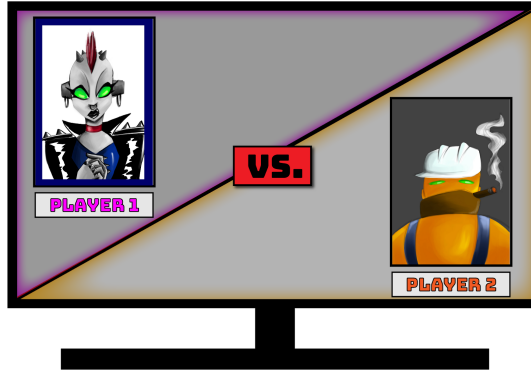
Where PS is the players score in the relevant spec score and TS is the target score. This formula means that if the player score and the target score is equal, there is a 50-50 chance of the player succeeding. If the player score is doubled or more than doubled, they have a 100% chance of succeeding. A player's chance of success can also never be 0%, meaning they always have a chance of being successful. After the game determines if they succeeded or failed, they are presented with the result and the effects of said result, as in Figure 18.



**Figure 18:** Different Results of a Spec Challenge

#### 4.4.5 Combat

When a player is turned traitor by the AI, their goal switches from escaping the ship to eliminating the other players. They do this by attacking them using the combat system. When a traitor enters a room containing a non-traitor, they are given the option of attacking that player instead of performing an interaction. Non-traitors are allowed to perform this action against traitors, but only if that traitor has attacked another player previously. This prevents traitors from being implicitly revealed before they are ready to act. When a player attacks another player, they are presented with the combat screen, both on the main screen (Figure 19) and on their phones (Figure 20).

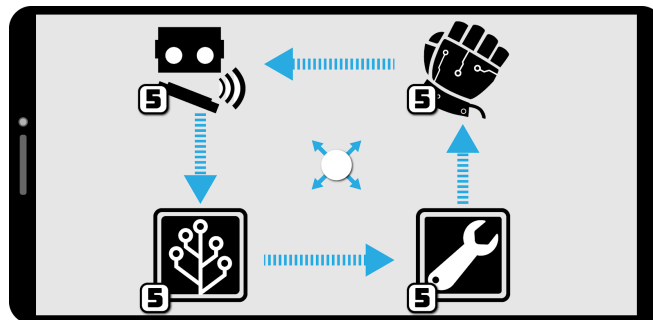


**Figure 19:** Players Fighting on Main Screen

Combat is resolved through a special form of a spec challenge- the main difference being that it is between two players instead of against a target score. In order to determine which spec scores are utilised, both players are allowed to pick one of their spec scores to utilise in the combat. Ideally this would be their highest score, however in order to add some counterplay, each spec score is countered by another spec score. If a player picks a spec score which counters the other player's chosen spec score, their score is doubled when applied to the calculation. A summary of which scores counter each other is detailed below:

- Brawn counters Charm
- Charm counters Tech
- Tech counters Skill
- Skill counters Brawn

Players pick the spec score they want to utilise by flicking a counter toward the relevant spec score, as shown in Figure 20..



**Figure 20:** Players selecting their Spec Score for Combat

Once each player has picked their score and counter's have been applied, the scores are applied into the spec challenge formula, where the player score is replaced with the attacker's score and the target score is replaced with the defender's score. The chance to succeed is then the chance for the attacker to win the combat. Once the chance is calculated the player's are presented with the chance, from which the winner is determined and displayed, as in Figure 21.





**Figure 21:** Player Winning a Combat

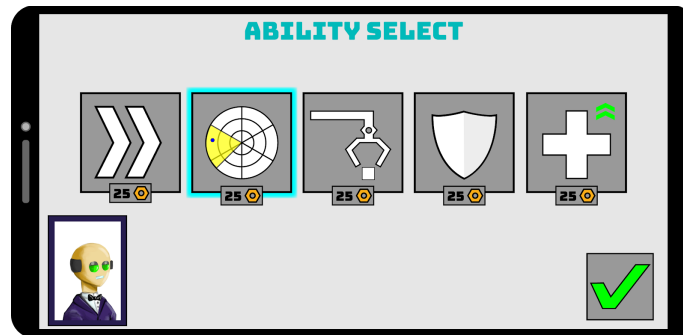
The loser of the combat is penalised by losing 1 life point, of which they have three. If their life points go to 0, they lose and are eliminated from the game, whether they be a traitor or a non-traitor, as in Figure 22. The winner of the combat is also able to choose a spec item or a component the loser is carrying and steal it from them. If the player is eliminated, they steal all of their items. The item is then placed in their inventory, or if they do not have the space, discarded (following the rules for gaining items in [4.4.3](#)). In order to prevent the loser from being overwhelmed by the winner, the loser is also granted 2 action points which they can use on their next turn to make a quick getaway.



**Figure 22:** Aftermath of a Player Being Eliminated

## 4.5 Player Abilities

Abilities are skills the player can use to support themselves or their companions in winning the game. These abilities are used before a player begins their movement and cost scrap to utilise, preventing them from being used from the beginning of the game. The resource cost also means the player is discouraged from using them excessively. Players can only use one ability per turn. Players select their abilities using the menu displayed in Figure 23. Once they have used an ability they move on to the action point and movement screen. A player is not required to use an ability on their turn.



**Figure 23:** Ability Selection Screen

Abilities come from two different sources, character abilities and corruption abilities. Character abilities are abilities which are unique to each robot avatar and do not have a restriction to their use (beyond their scrap cost). Each avatar only has one character ability. Corruption abilities are abilities which the player can utilise when their corruption crosses certain thresholds. These thresholds are unique to each ability and acts as a prerequisite for its use. If their corruption ever falls below said threshold, their use of the ability is prohibited until they cross that threshold again.

## 4.5.1 Character Abilities

Below is a list of all the character abilities in Space Traitors.

<b>Ability Name</b>	<b>Character</b>	<b>Scrap Cost</b>	<b>Ability Description</b>
Shove	Brute	7	The Brute selects a different player character and forces them to move into a node of the Brute's choice adjacent to the other player's current position.
Secret Paths	Butler	6	The Butler reduces the action point cost of moving along all paths on the map by 1 for their next movement phase.
Preparation	Chef	8	The Chef gains a +1 bonus to all their spec scores until the start of their next turn.
Quick Repair	Engineer	12	The Engineer selects a player character and restores a life point to that player up to their maximum.
Encouraging Song	Singer	5	The Singer selects a player character and reduces their corruption by 15%.
Muddle Sensors	Techie	6	The Techie provides a decoy location on the map when they move. Their figure on the map will appear to move to a different space on the map to where they actually move to. Their actual location is revealed at the start of their next turn, or if someone enters the room where their decoy is or their actual location.

## 4.5.2 Corruption Abilities

Below is a list of all the corruption abilities in Space Traitors.

<b>Ability Name</b>	<b>Corruption Threshold</b>	<b>Scrap Cost</b>	<b>Ability Description</b>
Sensor Scan	25%	3	The player scans the rooms adjacent to them for a particular resource of their choice (scrap, spec items or components). If any of the adjacent rooms to the player contains a their chosen resource, will provide a ping indicating where on their phone.
Code Inspection	50%	5	The player selects another player and is privately informed if they are a traitor or non-traitor.
Sabotage	75%	10	The player sabotages the escape shuttle such that the next person to attempt to install a component will fail to do so (i.e. their interaction is wasted) and they lose a life point. Once the sabotage is revealed its effect fades immediately. Multiple sabotages can be active at once, requiring the non-traitors to clear them one by one (although they will not know how many there are).
Power Up	100%	15	The player's life point maximum increases by one and they gain a life point.

## 4.6 Traitor and AI Mechanics

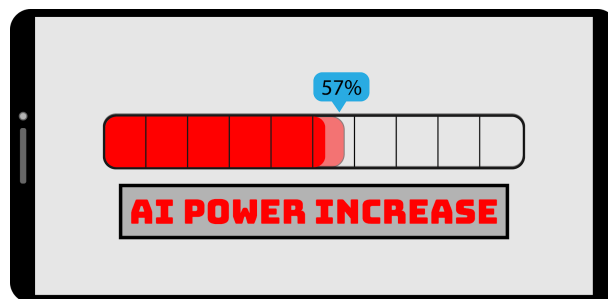
The gameplay shakeup that occurs within Space Traitors is the addition of traitors as the players are trying to escape the ship from the AI. As the AI regains control of the ship, it will come to a point in which a player is selected as a traitor and their goal transforms into eliminating the other players.

### 4.6.1 Power Surges

AI Power is a quantifiable value which represents the AI's control over the ship. It is a percentage value that lies between 0% and 100%. This value increases in an event known as a power surge. These surges occur at the end of the round after all players have had their turns. The amount AI power increases in that surge is based upon the player's behaviour in the previous round and is calculated by the following formula:

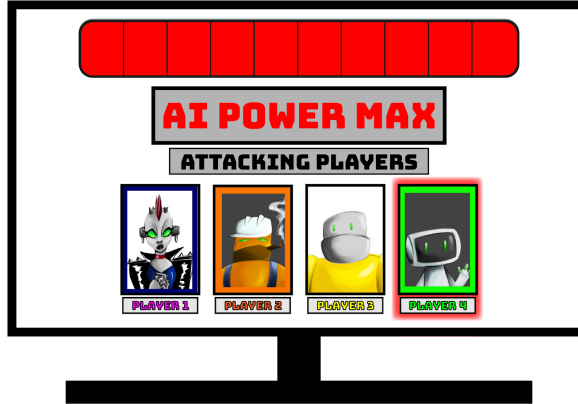
$$AI\ Power\ Increase = \frac{24}{\#Players} + \frac{Total\ Corruption}{5*\#Players} + Power\ from\ Interactions\ (rounded\ up)$$

This formula is constructed to provide on average 12 AI Power per round, meaning that it should be around 9-10 rounds of play before AI Power reaches its maximum at 100% and the game enters the end game, where traitors are guaranteed to be selected every 2 rounds. Furthermore, once AI Power reaches 100%, in order to motivate players to commit to actions and prevent the game from stagnating, the AI begins to attack the players.



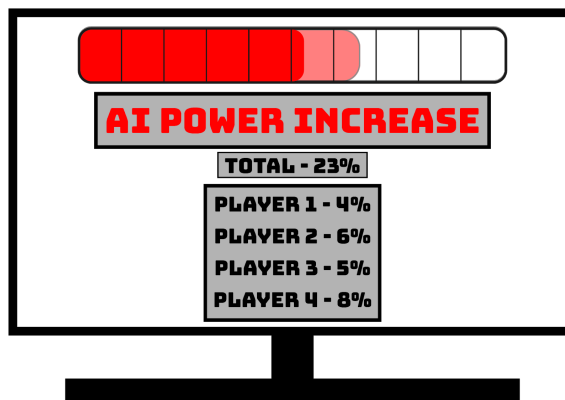
**Figure 24:** Power Surge for Players on Phone

Every round after AI Power hits 100%, the AI will pick a player at random (traitor or non-traitor) and attack them, with the selection process being demonstrated as in Figure 25. This interaction is a form of spec challenge, using the player's highest score as the player's score. The target score is initially equal to 5, however increases by 1 every round after AI Power hits 100%. On a success, there is no change. However if the player fails, they lose a life point. If the game progresses on for too long, eventually the target score for the AI will become impossible to beat and the players will start losing a life point per round.



**Figure 25:** AI Selecting a Random Player to Attack

When a power surge occurs, the players are presented with how much AI power has ticked up, as well as which players have most caused it to tick up the most, with Figure 24 detailing this display on the phone and Figure 26 detailing the display on the main screen. If AI power increases enough in a round, it may trigger the turning of a player into a traitor.



**Figure 26:** Power Surge on Main Screen

#### 4.6.2 Selecting a Traitor

AI Power also represents the percentage chance that a player is selected to become a traitor. Following the AI Power increase in a surge, Space Traitors determines if a player is to become a traitor. If a player is selected, then the game randomly determines which player based upon the player's corruption. The chance that a player becomes the traitor is calculated as follows:

$$\text{Chance to Become Traitor} = \text{Player Corruption} / \text{Total Non Traitor Corruption}$$

Only one player can become a traitor at a time and only a non traitor can be selected in this process (i.e. a player cannot be selected to be traitor twice). This

selection process occurs after every power surge so there can be multiple traitors selected through the course of the game. The exceptions to this are if a traitor was selected in the previous round or if there is only one non-traitor left. This is to stop traitors overwhelming the non-traitors as well as allowing the cooperative goal to always be possible to be achieved. However, if all players but one become the traitor, the last non-traitor can still win by either eliminating all other players instead of fixing the escape shuttle if they believe that objective is more viable.



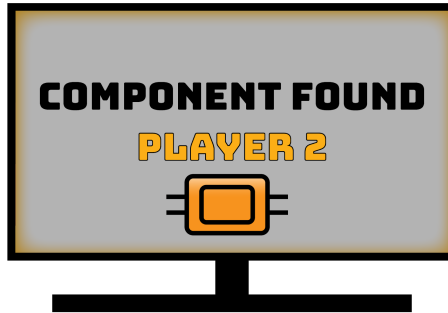
**Figure 27:** Player being Selected as Traitor

When a player becomes the traitor, only the traitor is aware that this has occurred, as their phone will present a display indicating so (Figure 27). In order to prevent suspicion, all players are reminded whether they are a traitor or non-traitor during this phase (even on rounds where a traitor is not selected).

When a player becomes the traitor, and every round after they become a traitor (during a surge), their corruption is increased by 15%, although this still caps out at 100%. The traitor can also begin attacking other players when they wish to, however cannot be attacked until they themselves have attacked another player.

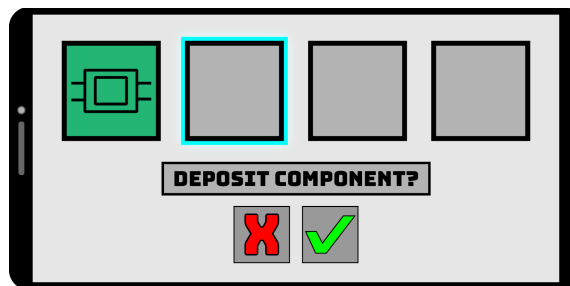
## 4.7 Escaping the Ship

In order for the non-traitors to win the game, they need to find the components to repair the escape shuttle, which are spread throughout The Eden. The number of components is equal to the number of players in the game. When a player enters a room containing a component, they are allowed to pick it up as an interaction within that room. All players are made aware that they have picked it up (as in Figure 27) and it is put next to their player icon on the main screen and remains there until they install it in the escape shuttle. A player can only carry one component at a time, however it can be discarded as a spec item would be, returning to the location in which it was found.



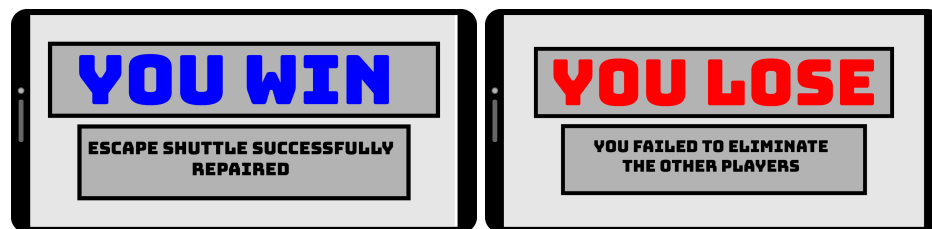
**Figure 28:** Player Picking up a Component on Main Screen

Once players have picked up a component, they need to return it to the escape shuttle to install it. When they enter the escape shuttle bay, the player is presented with the interaction screen for the escape shuttle bay, although it is different to a normal interaction screen, as demonstrated in Figure 28. Instead, the player is presented with the button to install the component they have collected, or they can pass. Once a player has installed a component, all players are made aware on the main screen and the player's turn ends. A component cannot be removed once it is installed.



**Figure 28:** Player Depositing a Component on their Phone

Once players have found and installed all the escape shuttle components, they can flee The Eden. This requires all non-traitors to return to the escape shuttle bay. If all non-traitors end a round (before the next power surge) in the escape shuttle bay, the non-traitors are presented with their victory screen of escaping the ship. Alternatively, the traitors are presented with a loss screen as they failed to eliminate the other players in time. These two displays are demonstrated in Figure 29. Once this outcome has occurred, the game concludes.



**Figure 29:** Victory Screen for Non-Traitors (Left) and Traitors (Right)



# 5.0 Game Flow

## 5.1 Game Loop Diagram

The below diagram (Figure 28) details the step-by-step process of a player playing a game of Space Traitors, from starting the game up to either the traitors or non-traitors winning the game. Note that the Green node is the start of the game and the two Red nodes are the two end states of the game.

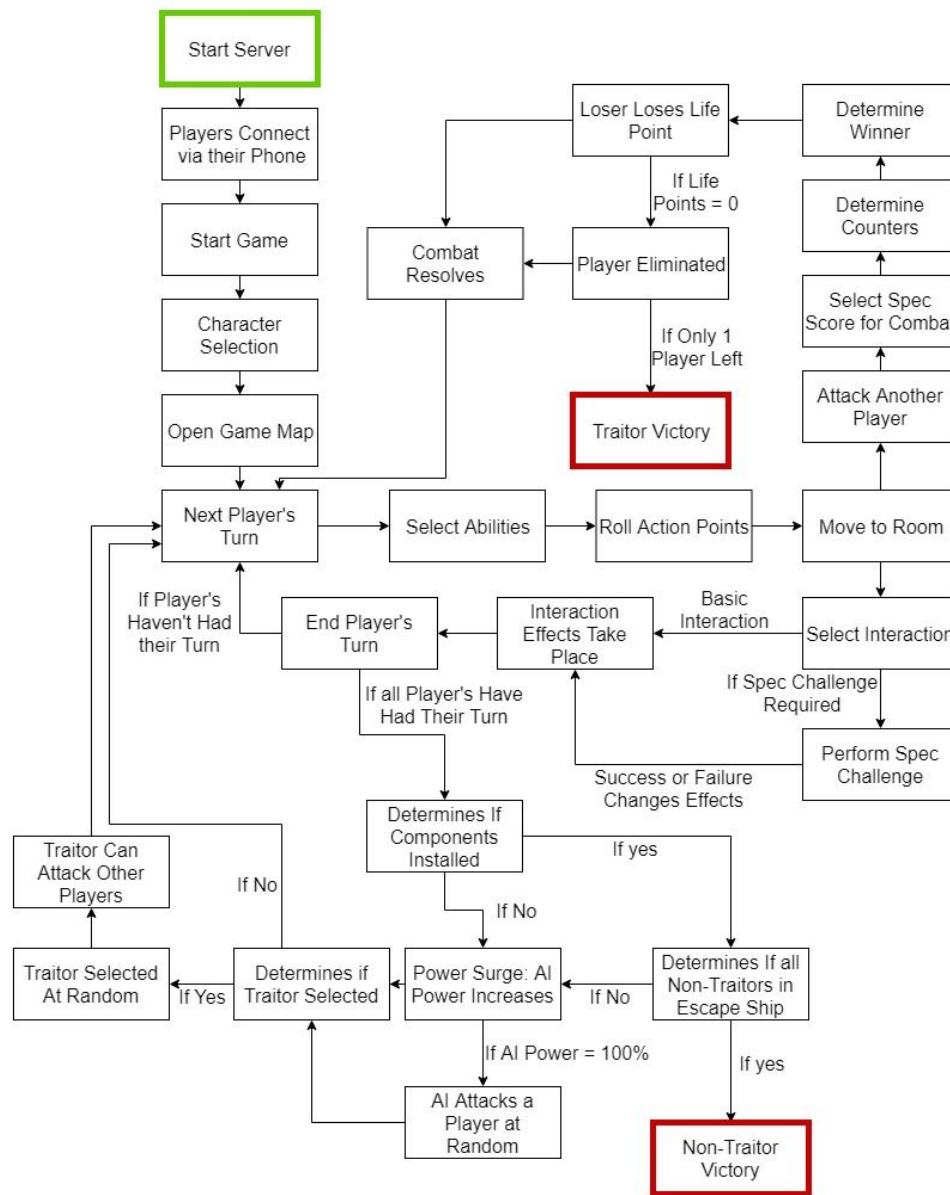


Figure 30: Game Flow Diagram

## 5.2 Gameplay Storyboards

The following section details various scenarios that arise throughout a game of Space Traitors in storyboard format from the player's perspective.

### 5.2.1 Launching and Character Selection

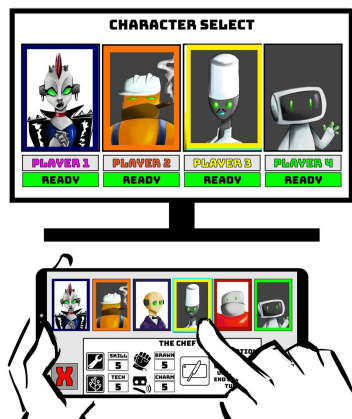
#### 1. Players Launching the Game



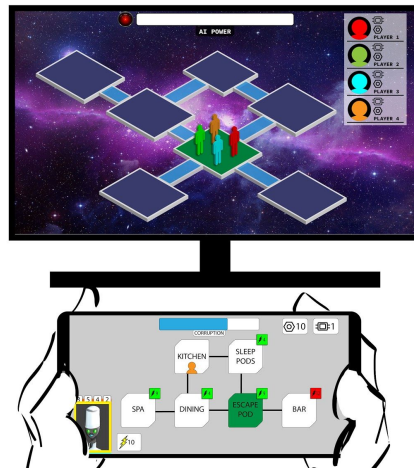
#### 2. Players Connecting to Game



#### 3. Players Select their Characters

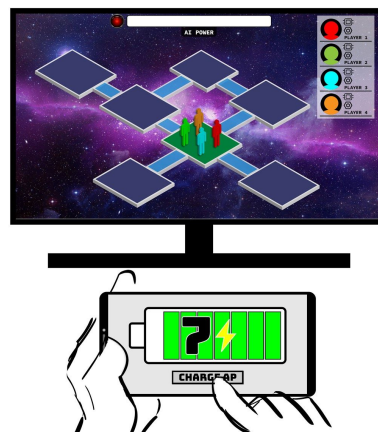


#### 4. Player Starting Game in Escape Shuttle

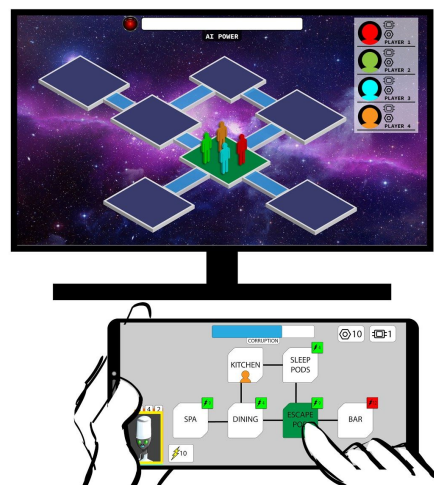


### 5.2.2 Character Movement and Interactions

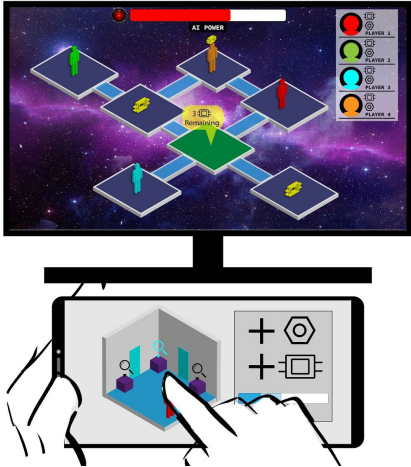
#### 1. Player Rolls their Action Points



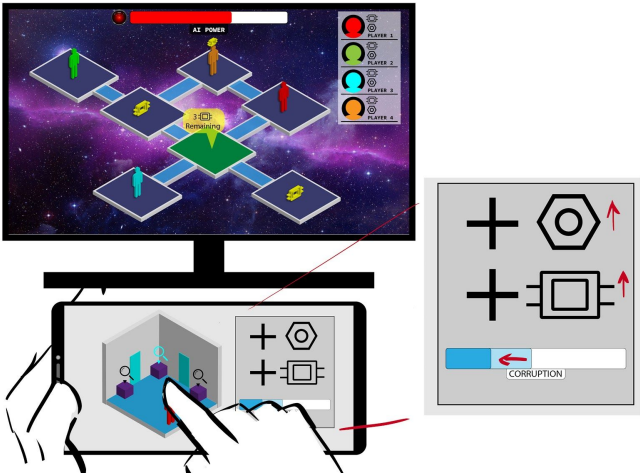
#### 2. Player Moves Between Rooms



3. Player Presented with Interaction

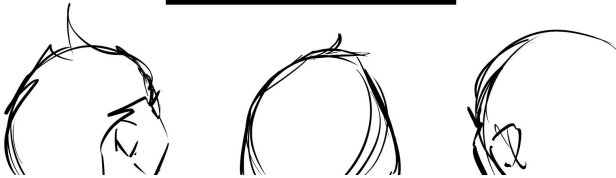
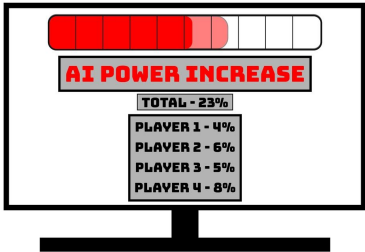


4. Outcome of Interaction Resolves



5.2.3 Power Surges and Traitor Selection

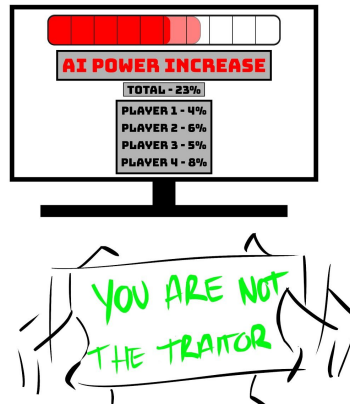
1. AI Power Increases at End of Round



2a. No Traitor Selected



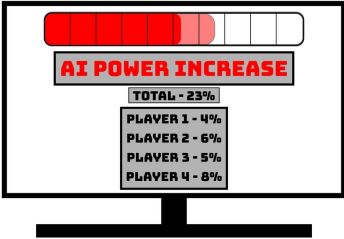
3a. All Players See the Following



2b. Traitor Selected

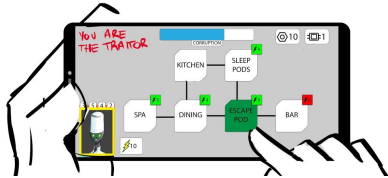
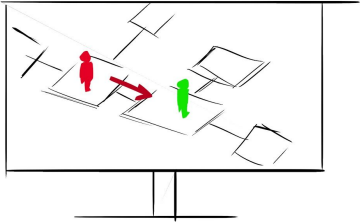


3b. One Player Sees the Following (Other Players see 3a)

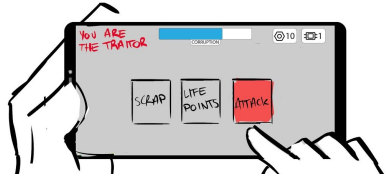
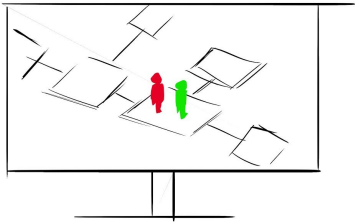


### 5.2.4 Combat

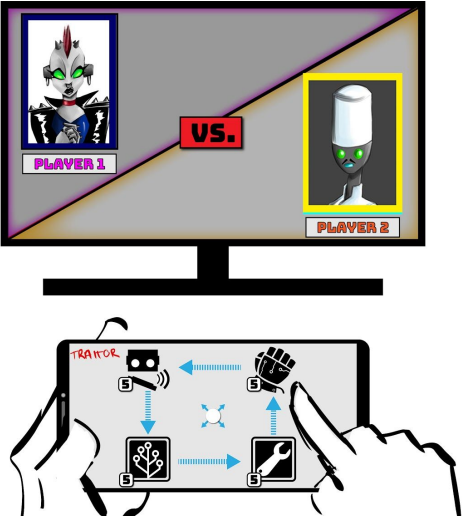
1. Traitor (Red) moves into Room with Non-Traitor (Green)



2. Traitor Selects to Attack Non-Traitor



3. Players Presented with Combat Screens and Pick their Spec Score



4. Traitor Wins the Combat

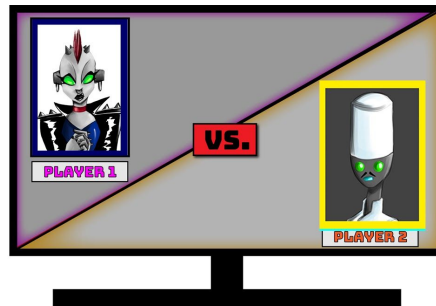


5. Non-Traitor Loses the Combat and Loses a Life Point

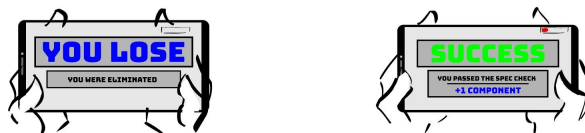


## 5.2.5 Traitor Victory

1. Last Two Players in Game Fight- Both on One Life Point, Both Traitors



2. One Player Wins the Combat



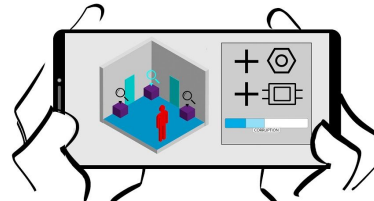
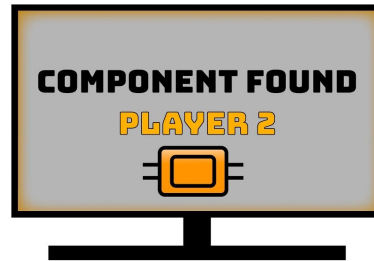
3. Winner of the Combat is the Last Player Standing, So Wins the Game



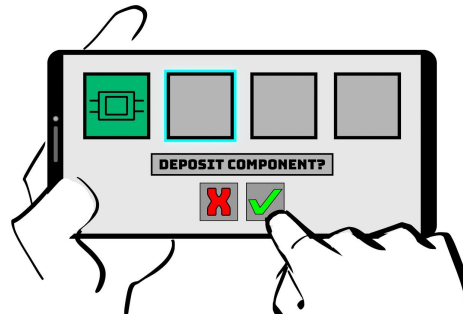


## 5.2.6 Non-Traitor Victory

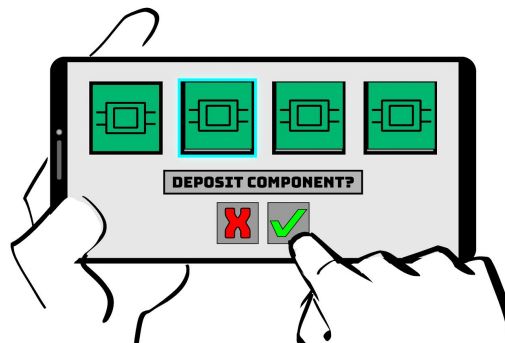
### 1. Component Discovered While Exploring



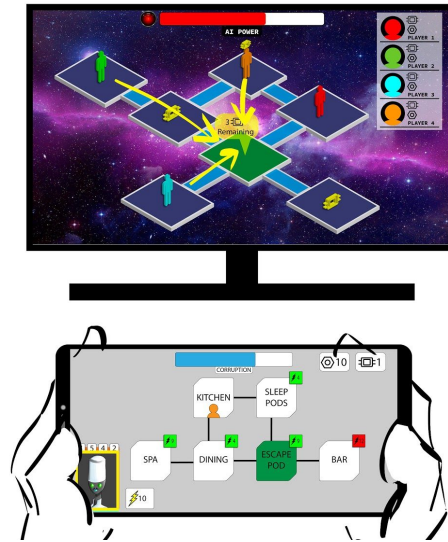
### 2. First Component Installed on Escape Shuttle



### 3. Last Component Installed on Escape Shuttle



4. All Non-Traitors Move to Escape Shuttle Bay



5. Non-Traitors are Shown Victory Screen



6. Traitors are Shown Lose Screen



## 5.3 Room Map

The below diagram (Figure 31) details the layout of the rooms in Space Traitors. Each node on the map represents one of the rooms. The node is also coloured to identify its room type, detailed in the key. The letter is an identifier for each of the rooms. The numbers next to the paths represents the action point cost to move along those paths. Since the choices are randomised at the start of the game, the locations of components and items will be different every time, so it is difficult to note where key points of conflict will occur. However, conflict will definitely occur around Room A, the Escape Shuttle Bay, since this is where players will have to return the components to as the traitors have to hurry to stop them.

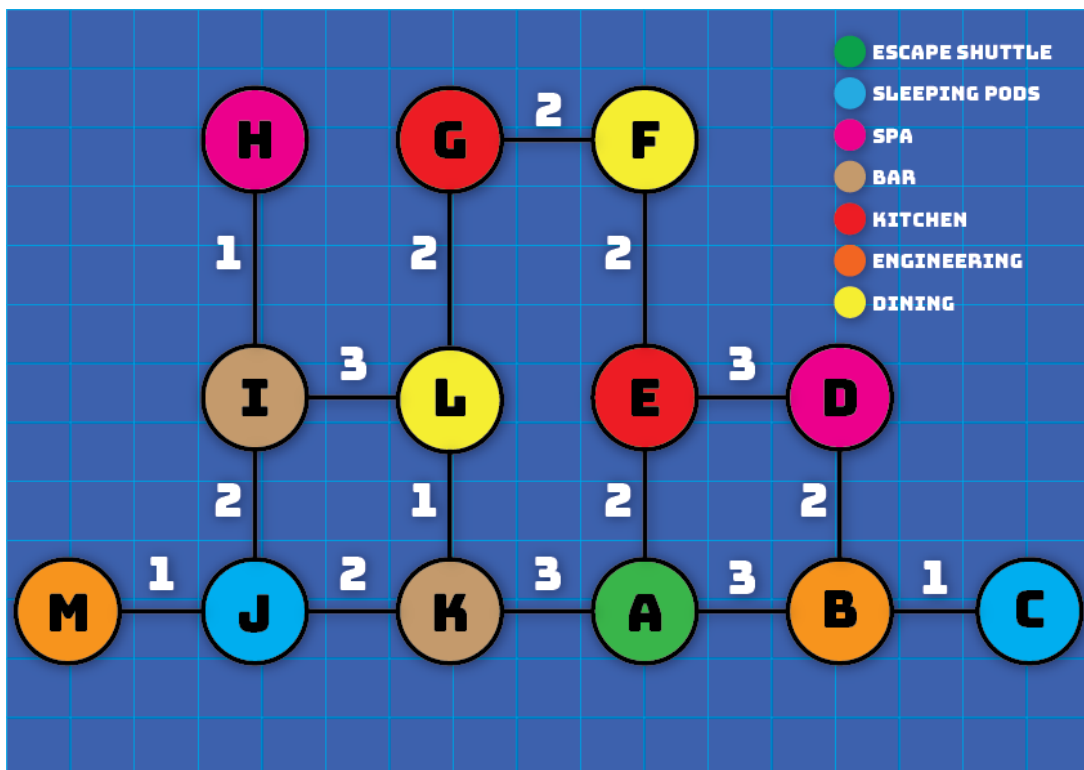


Figure 31: Room Layout of Space Traitors

## 6.0 Artistic Style

### 6.1 Overall Style

The artistic style in Space Traitors is intended to be a cartoonish, bright and colourful style in order to allow players to feel comfortable while they are playing and embrace the party game atmosphere that the game is intended to provide. Heavy inspiration for these aesthetics will be taken from games such as “The Legend of Zelda: The Wind Waker” and “A Hat in Time”, as demonstrated in Figure 32 below. Another aspect of the style within these games that can be utilised for Space Traitors is the application of cel shaded lighting, which helps reinforce the feeling of a “living cartoon”.

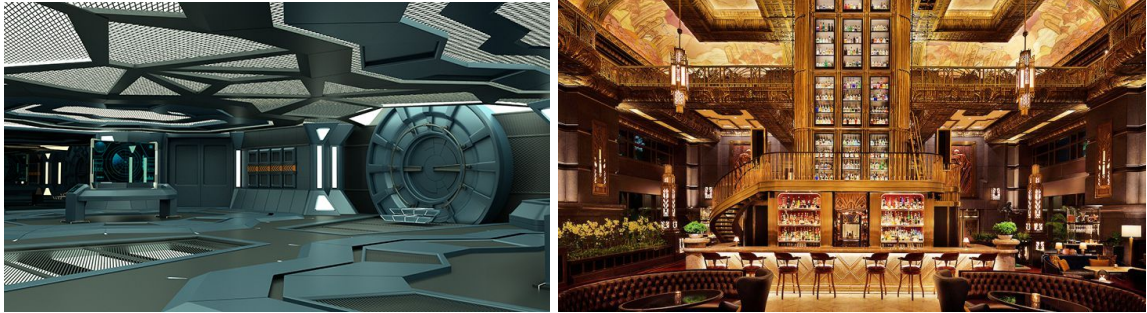


**Figure 32:** Inspirations for the Art Style of Space Traitors. Left is “A Hat in Time” (2017) and right is “The Legend of Zelda: The Wind Waker HD” (2013)

Space Traitors’ art style will primarily use a flat and simple colour palette which is utilised within simple textures in order to convey a bright, vibrant and inviting world for the players of Space Traitors. This can be further reinforced by the use of cel and toon shaders to overlay the design of the models and textures. Another aspect that can be utilised to strengthen the cartoon aspect is the utilisation of simple and low poly models. This helps to further underline the fun and cartoonish nature of the game, but also helps to reduce workload and increase system performance.

### 6.2 Environment Design

Space Traitors is set aboard a futuristic cruise ship and as such much of the environment will take inspiration from traditional science fiction environments. However, much like cruises today have a theme associated with them, the passengers and crew aboard Space Traitors have been taken with the jazzy feel of the 1920s, taking heavy influence from art deco styles for the architecture and furniture. Examples of both environments can be seen in Figure 33 below:



**Figure 33:** Science Fiction (Left) and Art Deco (Right) will be the Key Inspirations for the Environment Design

This design for the environments will require a blend of old and future aesthetics, combining the clean blues, greys and whites of science fiction with the intense browns blacks and golds of the 1920s. Certain room types will lean slightly toward one side of this spectrum, however all should have elements which can fit into both environment styles. For example, the Engineering room will lean more toward the science fiction style while the Bar will lean toward the art deco style, whereas a room like the Sleeping Pods will fall more towards the middle. Some examples of such a combination come from games like “Prey” (2017) and the movie “Passengers” (2016), as can be seen in the images in Figure 34.



**Figure 34:** Combinations of Art Deco and Science Fiction Designs in Contemporary Media. Left is From Prey (2017) and Right is From Passengers (2016).

### 6.3 User Interface Design

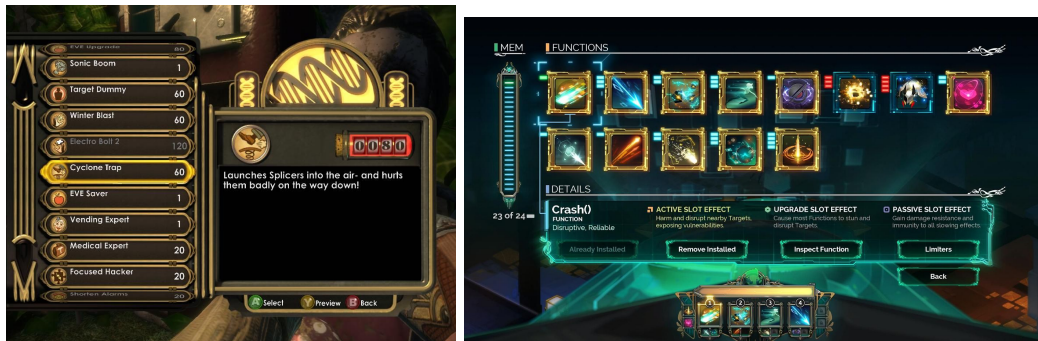
The user interface (UI) design of Space Traitors will be very similar to the environment design, taking a blend of the science fiction aesthetic with the art deco style. These two styles blend quite well within a UI sense as both rely on the use of lots of sharp lines and blocky shapes to convey their style. Again, much like the environment design, certain elements of the UI may take more influence from one end of the established spectrum, although again will always utilise elements of both. The science fiction aspects will use more blues and yellows and be rather basic in shape, however will be embellished by

the use of blacks and golds for the art deco styling. Examples of both styles can be seen in Figure 35 below.



**Figure 35:** Examples of Science Fiction (Left) and Art Deco (Right) User Interfaces

Some examples of combining the two styles can also be taken from contemporary media, from games such as Bioshock (2007) and Transistor (2014). Both games utilise a very standard looking interface, however embellish it with aspects of the art deco styling, as is intended with Space Traitors. Bioshock does lean more toward the art deco styling and Transistor more toward the science fiction stylings, so meeting more toward the middle will be an ideal design for Space Traitors. The styles for both games can be seen in Figure 36.

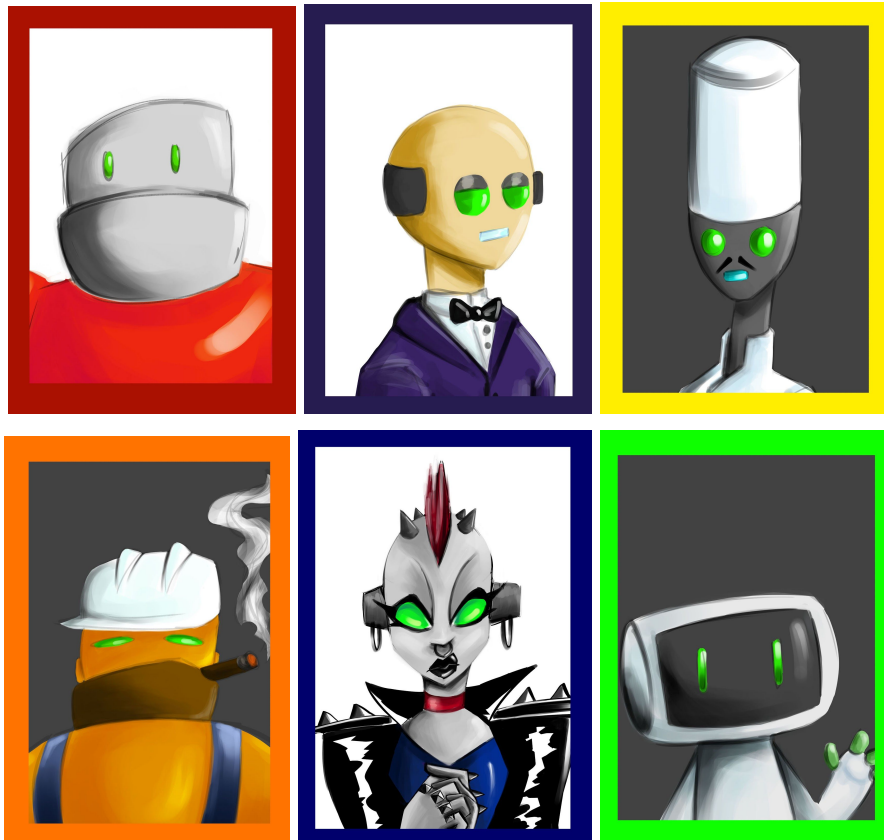


**Figure 36:** Contemporary Examples of Combining Science Fiction with Art Deco in a User Interface from Bioshock (Left) and Transistor (Right)

## 6.4 Character Design

The characterisation of the robot avatars in Space Traitors is an important aspect of the visual design of Space Traitors as these provide a distinct element of the game which players can be drawn to. The characterisation does this by providing a humorous and charming aspect to the game, which allows the player to have a connection with robots, since they look and act human-like, albeit with a robotic design to them. Furthermore, since the characters are robots, it allows for a more unrealistic and cartoonish aspect to their design that does not break a player's immersion in their questioning of how a

human could look so outlandish. The high degree of characterisation also allows for each robot to also look distinct from each other so that player's are not confused when trying to find their, or another player's, avatar. This is further reinforced by the attachment of a primary colour to each character such that they can be easily identified. Example headshots with their associated colour as a border for each of the characters in Space Traitors can be seen in Figure 37 below.



**Figure 37:** Character Headshots of Each of the Six Robot Avatars in Space Traitors

The idea of characterising the robots takes a lot of inspiration from contemporary media such as “Ratchet and Clank”, “The Iron Giant” and, more recently, “Love, Death and Robots” (Figure 38). Each of these sources of media enforces a personality upon the robots within them, providing a likeable and relatable aspect to them as characters, rather than just as computers or pieces of machinery. This helps further reinforce the idea of the game being a party game, since the game is shown not to take itself too seriously through the emotive and exaggerated design of its characters.



**Figure 38:** Examples of Highly Characterised Robots in Contemporary Media. Left is from Love Death and Robots (2019) and right is from the Iron Giant (1999)

Each of the robot's design in Space Traitors is also intended to be easily able to tie the robot back with their intended role aboard the ship (as they were initially the crewmembers of The Eden) as well as toward their personality. For example the Engineer is designed to look like a construction worker as this character is more "hands on" with ship maintenance compared to others. Additionally its outfit and props further exemplify him as a gruff and tumble sort of character while its posture and mannerisms indicate he is very laid back and calm in its demeanour, as can be seen in Figure 39 below. Each character in the game will attempt to take on the aspects of their personality and role of their character in both their design and animations, providing a definitive connections for player's to be drawn toward when they are playing Space Traitors.



**Figure 39:** Concept Art of the Engineer Character



## 7.0 Appendices

### Appendix 1: Major Game Components

- Main Ship Level:
  - Room A: Escape Shuttle Bay
  - Room B: Engineering 1
  - Room C: Sleeping Pods 1
  - Room D: Spa 1
  - Room E: Kitchen 1
  - Room F: Dining Hall 1
  - Room G: Kitchen 2
  - Room H: Spa 2
  - Room I: Bar 1
  - Room J: Sleeping Pods 2
  - Room K: Bar 2
  - Room L: Dining Hall 2
  - Room M: Engineering 2
- Choices:
  - Grab Component
  - Scrap for Parts
  - Salvage Systems
  - Repair Robo-Brain
  - Repair Speed Boots
  - Repair Boxing Gloves
  - Sew Dazzling Outfit
  - Fend Off Autonomous Arms
  - Smash Open Fuel Container
  - Hack Open Mysterious Box
  - Stun the Glasses Case
  - Break Open Strongbox
  - Pry Open Jammed Door
  - Override Security
  - Impress Ship Systems
  - Initiate Repair Sequence
  - Initiate Purging Sequence
  - Lock Out the AI
  - Siphon Code Defects
  - Smash Ship Computers
  - Evade Security Systems
  - Isolate AI Controls

- Dazzle the AI
- Accept AI Bribe
- TV Screen Menus:
  - Title Screen
  - Start Menu
  - Lobby/Connection List
  - Game Start/Transition Screen
    - For Loading and Asking Players not to look at each others Phones
  - Player List Character Selection
  - Game Map
    - Player List
    - Objective Tracker
  - Power Surge Screen
  - AI Attack Screen
  - Combat Screen
    - Winner Screen
  - Component Pickup
  - Component Returned
  - Player Turn Pop-Up
  - Round Start Pop-Up
  - Round End Pop-Up
  - Game End
    - Traitor Victory
    - Non-Traitor Victory
- Mobile Screen Menus
  - Start Menu
  - Server/Connection List
  - Game Start/Transition Screen
    - For Loading and Asking Players not to look at each others Phones
  - Character Selection
    - Headshots
    - Character Details
      - Abilities
      - Spec Scores
  - Inventory Screen
    - Equipping and Unequipping Items
    - Spec Score Change Pop-up
  - Ability Screen
    - Ability Details Pop-up
  - Action Point Roller
  - Room Selection Screen for Movement
  - Room Interaction Screen
    - Component Drop-Off for Escape Shuttle Bay

- Interaction Details Pop-Up
  - Spec Challenge Checking (Success or Failure)
- Combat Screen
  - Combat Spec Selection Mini-Game
  - Victory Screen
  - Lose Screen
- Traitor Selection Screen
- Non-Traitor Confirmation Screen
- Elimination Screen
- Traitor Victory Screen
- Non-Traitor Victory Screen
- Traitor Lose Screen (if non-traitors escape)

## Appendix 2: Asset Breakdown

- Character Models- Modelling, Texturing and Rigging:
  - Brute
  - Butler
  - Chef
  - Engineer
  - Singer
  - Techie
- Character Animation per Character (6):
  - Idle Animation
  - Walk Animation
  - Character Selection Animation
  - Combat Intro Animation
  - Combat Win Animation
- Room Images:
  - Bar
  - Dining Hall
  - Engineering
  - Escape Shuttle Bay
  - Kitchen
  - Sleeping Pods
  - Spa
- Level Map Room Top Down Views:
  - Bar
  - Dining Hall
  - Engineering
  - Escape Shuttle Bay
  - Kitchen
  - Sleeping Pods
  - Spa
- Level Map 3D Models- Modelling and Texturing:
  - Bar
    - Bar Bench
    - Stools
    - Tall Tables
    - Piano and Stage
  - Dining Hall
    - Dining Tables
    - Chairs
    - Buffet Table
  - Engineering

- Work Bench
- Storage Crates
- Reactor
- Escape Shuttle Bay
  - Control Panel
  - Engine
  - Tool Box
  - Space Suit Dispenser
  - Escape Shuttle
- Kitchen
  - Grill and Burners
  - Sink
  - Bench
  - Refrigerator
- Sleeping Pods
  - Sleeping Pods
  - Lounge
  - Clothes Rack
- Spa
  - Massage Tables
  - Pool
  - Sun Lounge Chairs
- Spec Score Icons:
  - Brawn
  - Skill
  - Tech
  - Charm
- Resource Icons:
  - Scrap Icon
  - Corruption Icon
  - AI Power Icon
  - Component Icon
  - Life Points Icon
- Spec Item Icons:
  - Boxing Gloves
  - Speed Boots
  - Robo-Brain
  - Dazzling Outfit
  - Fancy Glasses
  - Extra Arms
  - Hyper Fuel
  - Spy Suit
- Node Icon

- Interaction Icon
- Abilities Icons
  - Character Abilities
    - Shove
    - Secret Paths
    - Preparation
    - Quick Repair
    - Encouraging Song
    - Muddle Sensors
  - Corruption Abilities
    - Sensor Scan
    - Code Inspection
    - Sabotage
    - Power Up

## Appendix 3: Project Timeline

See attached Excel Spreadsheet for Project Timeline.

## Appendix 4: Additional Ideas and Possibilities

The below section details various extra ideas which could be implemented in Space Traitors which should be considered to be implemented if there is extra time toward the end of development, with certain ideas being more viable than others.

### Tutorial Pop-Ups

Instead of teaching the player how to play through the use of a direct or text tutorial, the player can be taught through the use of popups which come up on the UI. Since each player takes all their actions on their phone, this allows for each player to have the popups enabled or disabled based on their experience with the game, with more experienced players not forced to run through the tutorial if they do not want to be. These popups could also provide additional humour and characterisation to the game by having the popups be written as if they are coming from the AI, which could have its own personality and traits associated with its “speech”.

### Component Manufacturing

A system which would allow for non-traitors to have an easier time with achieving the cooperative objective would be to allow players to manufacture components with scrap. This was removed following paper prototype playtesting as players were hoarding scrap for this as opposed to using it for abilities or finding the components themselves. However this option should be considered if the game is found to be too difficult for the non-traitors.

### Passive Abilities

To add further distinction between the different robot characters, each character could have a unique passive ability which provides them bonuses throughout the game. Unlike character abilities, these abilities do not cost scrap to utilise and are constantly active.

### Spec Item Trading

An addition to the inventory system which would provide a quality of life change for the players would be the ability to trade spec items between players. Using this system, players would be able to voluntarily send their spec items to other players in the game. This system would also allow players to send scrap to each other to utilise on their next turn.



## Map Obstacles

In order to give the map more terrain, there could be various obstacles which impede or slow the player's progress, such as locked doors or damaged terrain which slows movement. These obstacles could potentially be removed by choices present through the map. These obstacles would also be randomised to give more replayability to the game.

## Traps and Hazards

An extension upon the terrain feature explained previously, traps and hazards would be obstacles which can be generated by other players or by the AI. Players which pass through these traps are dealt damage or gain corruption. Would further exemplify the mistrust between players and also allow traitors to act more secretly by placing traps without revealing themselves directly as the traitor.

## End of Turn Effects

When players end their turn in certain rooms, they may gain certain buffs or debuffs based upon effects that are present within those rooms. These buffs could give life points, increase corruption or give scrap.

## Additional Rooms and Randomised Map Structure

In order to enhance the diversity of the map, additional room types could be added which further demonstrate the lifestyle of the passengers aboard The Eden. Some of these rooms could be able to be used multiple times (such as a store room or an entertainment complex) or could be unique (such as the AI Core or Ship Bridge). The addition of more rooms could also allow for a randomly generated map structure, since the current number of rooms would not make for an interesting random map structure.

## AI Features Gained Through AI Power

In order to reflect the AI gaining power over the course of the game, when AI Power reaches certain thresholds, map wide effects take place which the AI uses to impede the non-traitors progress, some of which give benefits to traitors, others which give drawbacks to the non-traitors.

## Voice Lines

In order to further add to the characterisation and appeal of the various robot characters in the game, it would be ideal to add voice lines unique to each of the

characters which further exemplify their personality and traits. These voice lines would arise in various situations and be unique for each character.

## Unique Combat Animations

While currently each character has a general combat animation, the two characters do not interact with each other in this animation. To further provide visual interest to the players, these animations could be extended by having a unique animation for each combination of characters (i.e. 30 unique animations) which plays with the traits of each character and how they would interact if they were fighting each other. These animations would also provide further characterisation for each character.

## 8.0 References

Blazing Snowball. 2014. "A Hat in Time is an upcoming collect-a-thon game. It looks promising, and if it does well, we might see more games similar to Super Mario 64, Banjo-Kazooie, and Donkey Kong 64." Accessed 26th May 2019.

[https://www.reddit.com/r/gaming/comments/1zyp1w/a\\_hat\\_in\\_time\\_is\\_an\\_upcoming\\_collectath\\_on\\_game\\_it/](https://www.reddit.com/r/gaming/comments/1zyp1w/a_hat_in_time_is_an_upcoming_collectath_on_game_it/)

Meyer, J. 2013. "Wind Waker, a Zelda Game Whose Time Has Finally Come". Accessed 26th May 2019. <https://www.wired.com/2013/09/wind-waker-hd-wii-u/>

Robertson A. 2017. "Prey is a Complex, Tense and Scattered Piece of Survival Horror". Accessed 26th May 2019.

<https://www.theverge.com/2017/5/8/15581242/prey-review-xbox-one-ps4-pc-bethesda-arkane>

Geurtsen D. 2016. "Passengers (2016)". Accessed 26th May 2019.

<http://www.dannygeurtsen.com/conceptillustrations/passengers/>

ApexInfinityG. 2017. "Futuristic Spaceship Interior". Accessed 26th May 2019.

<https://www.gamedevmarket.net/asset/futuristic-spaceship-interior-10067/>

Wuiping. 2017. "10 Art deco-themed restaurants and bars in Singapore to fall in love with". Accessed 26th May 2019.

<https://www.mariefranceasia.com/food/hot-spots/recommended-spots/art-deco-sg-262140.html>

SystemEra. 2018. "Simple Sci-Fi UI Starter Kit". Accessed 26th May 2019.

<https://assetstore.unity.com/packages/2d/gui/simple-sci-fi-ui-starter-kit-110315>

Carthew, B. 2017. "University of Worcester- My Game Art Design Blog". Accessed 26th May 2019. <http://billy-carthew.blogspot.com/2017/02/>

Galayde, D. 2017. "Transistor UI Analysis". Accessed 26th May 2019.

<https://www.galaydegames.com/blogpage/transistor-ui-analysis>

Greene, S. 2019. "'Love, Death and Robots': Netflix Addresses Suspicious Changes in Episode Order". Accessed 26th May 2019.

<https://www.indiewire.com/2019/03/love-death-and-robots-netflix-episode-order-changing-1202052377/>

Debczak, M. 2017. "10 Towering Facts About the Iron Giant". Accessed 26th May 2019.

<http://mentalfloss.com/article/78749/10-towering-facts-about-iron-giant>