

1 Companion Design Brief

1.1 New Companion Character in *Far Cry Blood Dragon* Design Brief

The new companion character is an enhanced AI system to be added to *Far Cry Blood Dragon*. Different from the existing AI systems (e.g., HUD for guidance), the new AI system will be a new character in the story that will interact with the main character REX, influence the plot, and create new features in the game. The character will be a system REX meets on the way of his adventure and will be plugged into REX's cyborg body.

1.2 Design Purpose and Vision Brief

The goal of the new design is to make full use of the concept of AI in the classic sci-fi theme to enrich the plot while providing the users with new experiences in playing the game by utilizing a novel guidance system. I believe that a successful companion character should not only support the user along the adventure but also acts as a motif or symbol of the core of the story.

The general goals for the new character design will include the following aspects:

- **New play mode with novel technical features:** The setting of *Far Cry Blood Dragon* is Science Fiction with characters' skills and features enabled by cyborg bodies. The new character will be an AI algorithm stored in a disk that will be later transferred into REX's system.
- **Enriched plot:** As a short time, the plot of the original game is simple, but does have a twist in the end. The presence of the new character helps to foreshadow the plot and shows the free will and determination of machines without human minds.
- **Guidance to game instructions and expressing the story idea:** In the original game, HUD itself is an AI character, but the new character can combine with the original HUD to give player instructions.
- **Fitting into the existing UI:** The additional skills and sight will be compatible with the existing UI.
- **Commercial values:** The new design will keep utilizing similar unique art styles, but more interesting playstyles and plot to attract more audience.

1.3 Character's Setting and Change in The Plot

REX found one mysterious disk. Wanting to see what was inside, he plugged it into his cyborg body. He then figured out it is an independent AI who could partially control his system. He has no idea how to get rid of it without SPIDER. The AI doesn't want to be in his body as well. She especially dislikes DR DARLING for some reason (this foreshadows the scene of the ending that DR DARLING is not such a good person as she seems to be, which also makes the plot more reasonable).

At first, when REX finds her, they both dislike each other. After they figured out they have to stay together, the AI compromises to use her ability to help REX. In return, REX will need to help her find something (it turned out she was looking for what DR DARLING was working on). Even though she sometimes makes jokes of REX, in the end when REX was confronting SLOAN, in order to help REX complete his goal, she decided to sacrifice herself to let REX be able to act freely even with HUD's prevention for a few seconds.

1.4 Purpose of Change in Plot and Character Settings

The charm of the 80s' sci-fi is not only the attractive visual styles, and tech concepts, but also the emotions and relationships between humans and AIs (such as *Blade Runner* and *Neuromancer*), and all the philosophical questions it leads to. Indeed, Far Cry Blood Dragon is excellent in presenting the 80s' visual styles, those humanistic themes can be considered, while the game maintains its sense of humor. From a commercial point of view, some players may not be so familiar with the unique art style, but they still want to experience the story with memorable characters, just like those in Far Cry 3.

1.5 New Gameplay Experiences Brief

Attract Blood Dragon: In the original game, the player can use the hearts to attract the blood dragons. In the new design, hearts will no longer be used. Instead, the AI can enable REX to emit a reflective sound wave so that it can create a sound source at a specific location. It can only be reflected on solid surfaces, so the players need to figure out where and in what direction to play the sound source. AI needs the power to emit the signal, and only killing Omega Force soldiers can refill the power.

Stealth: Before, there are colors on the UI indicating the status of the blood dragons. In the new design, it will only appear with AI's help for calculations. Also, the AI can play a directional active noise cancelation sound wave to completely silence gun shots. This needs cooldown time to refill.

AI sight: Pressing TAB shows the AI sight, which enables the player to set a specialized tracker on a specific enemy. The player can also see the companion AI on REX's side.

Multi-shots: The AI will emit a strong wave to break one shot to three shots with reduced power. When using this skill aiming is disabled, and it also needs cooldown time to refill.

1.6 Features of *Far Cry Companions*

Important features of a Far Cry companion:

- Something / somebody that the main character / player (an outsider in an unfamiliar place) can build emotional attachment upon
- Fits into the original genre (fps gameplay mode)
- Can enhance the main character's ability

Important features of a Far Cry **Blood Dragon** companion:

- Strong 80s' sci-fi visual & concept style
- Fits into the settings & styles of the existing game (cyborg, black humor)

1.7 How The New Character Fits into The Criteria

- The new character promises the main character that they will help each other.
- As discussed before, the AI can use her super calculation abilities to help enhance the main character's skills such as attracting blood dragons, denoising gunshots, splitting gunshots, etc.
- The concept of AI characters and the appearance design of the character (like 20th-century hairstyle and clothes) matches classical sci-fi style.
- The AI character will talk to REX along his adventure and sometimes make jokes about him, which contributes to a sense of humor.

2 Companion Design Details

2.1 Character Settings and References

Delta-12 chain gun in *Doom* (2016)



Fig 2.1

Star Wars' Z-6 rotary cannon

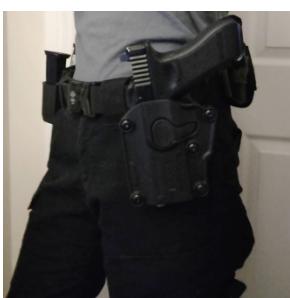


Fig 2.2

Weapon: sci-fi rotary cannon

References: *Star Wars'* Z-6 rotary cannon, Delta-12 chain gun in *Doom* (2016)

Women's tactical belt setup
Photo of myself



Tactical belt



Fig 2.5

Belt: tactical belt

References: women's tactical belt setup

Clothes: leather, simple, tight-fitting

References: *Neuromancer* (1984), *Ghost in the Shell* (1995)

Hair Style: 40s, blonde

References: *Blade Runner* (1982)

Blade Runner (1982)



Fig 2.3



1940s women's hairstyles



Fig 2.4



Neuromancer (1984)
Illustration by Juan Gimenez



Fig 2.6

Ghost in the Shell (1995)

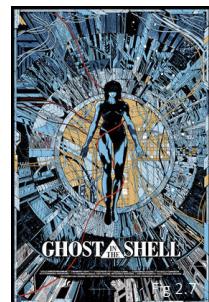


Fig 2.7

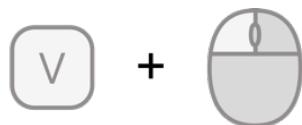
2.2 Character Abilities, Functionality, Controls, and Interactions

Active Skill 1: Emitting Reflective Directional Sound Waves

Description: Directional speakers can concentrate sound waves in one direction so that sound can only be heard on a small range. Reflective directional sound waves are sound waves that can be reflected, and the direction can be changed when hitting solid surfaces. The new character enables REX to emit reflective directional sound waves, which can emit fake gunshot sounds to attract enemies or blood dragons.

Control:

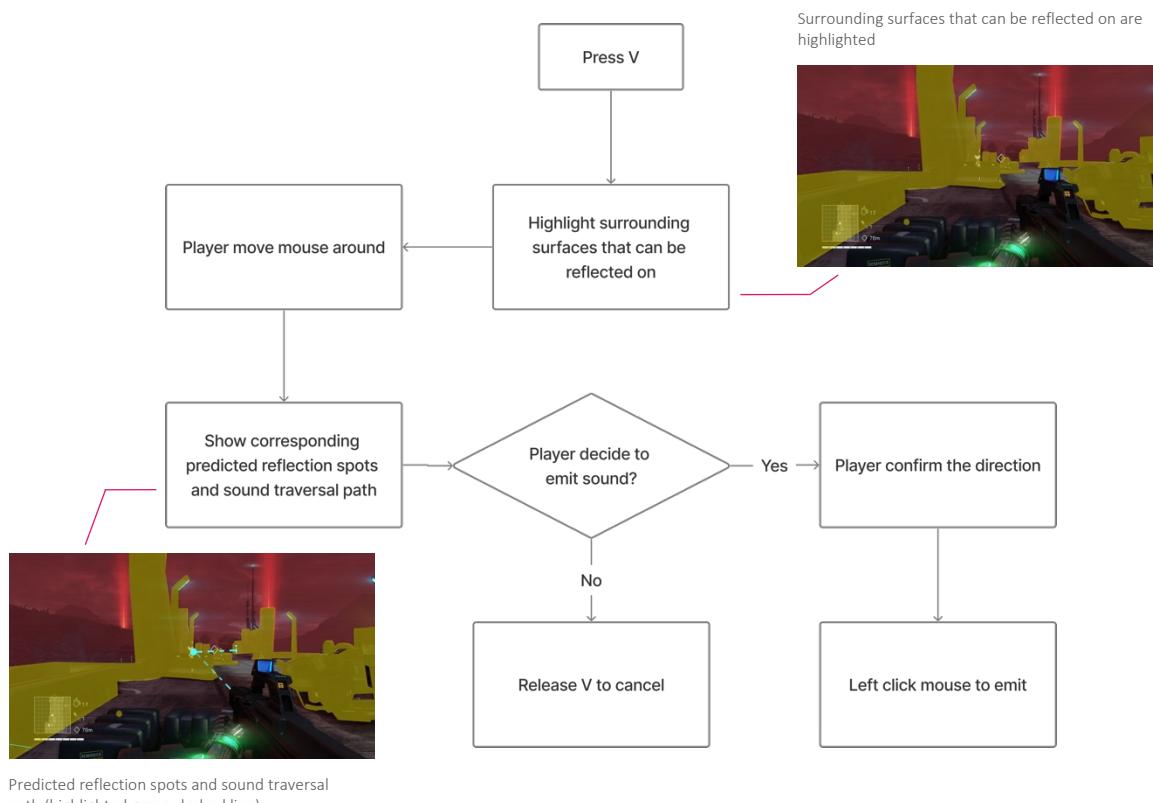
Emit Reflective Sound Wave:



Rules:

1. Must point on solid surfaces to reflect.
2. At most reflect twice.
3. Cannot cause damage / harm to enemies.
4. Enemies themselves can be reflection points. In this case they will assume the sound came from the last reflection point.
5. The sound wave is only effective in a specific range.

Interaction:



User Stories:

1. As a player who wants to avoid blood dragons in front of me, I want to be able to place sound sources behind the blood dragons, so that those blood dragons can be attracted to somewhere far away.
2. As a player who likes to play challenging but interesting modes, I want to be able to attract multiple enemies strategically, so that I can assassinate them without letting others know.

Play method 1: Using reflective sound to attract enemies / blood dragons

Applicable situations: attract enemies to go out of the covers (toward the fake sound origin), attract blood dragon to different direction.

Challenge for players:

1. Need to find ideal reflection points.
2. If it is possible, can use enemies as reflection points so that can attract at most three enemies. However, in this case need to respond to three enemies at the same time.

Play method 2: Directly attract enemies

Applicable situations: when behind the cover, attract enemies to come closer to the place the player is hiding so that can kill them behind the cover without letting others know or come out of the cover (similar to whistling in *Assassin's Creed*).

Challenge for players (**Balance**):

1. Need to attract the enemy the player wants to attract while making sure the reflected sound won't attract other enemies.
2. Need to make sure in the sound wave range there are no other enemies.

Active Skill 1 **differentiation** with traditional methods to attract enemies:

1. Traditional methods in different games usually use throwing items. Some games that have hacker skills may enable the player to control remote facilities (e.g., *Watch Dogs*, *Cyberpunk 2077*). The new design introduces a brand-new play mode that needs the player to strategically emit reflective sound waves.
2. Adds path planning elements to simple hiding stealth.

Active Skill 1 **design intent:** The original intent for using cyberhearts to attract blood dragons and using dice to attract cyber soldiers is to actively use environment and special items to achieve stealth gameplay. The new design is an experimental exploration that further enable the players to utilize and interact with the environment (not only to control the enemies' positions / actions but also fully use the map).

Active Skill 2: Active Noise Cancellation Silencer

Description: Since the new design doesn't need the player to throw cyberhearts, G key is available to active other skills now. The new character enables REX to emit an active noise cancellation to silence gunshots. The skill needs cooldown time to refill. Killing cyber soldiers can also speed up refilling.

Control:

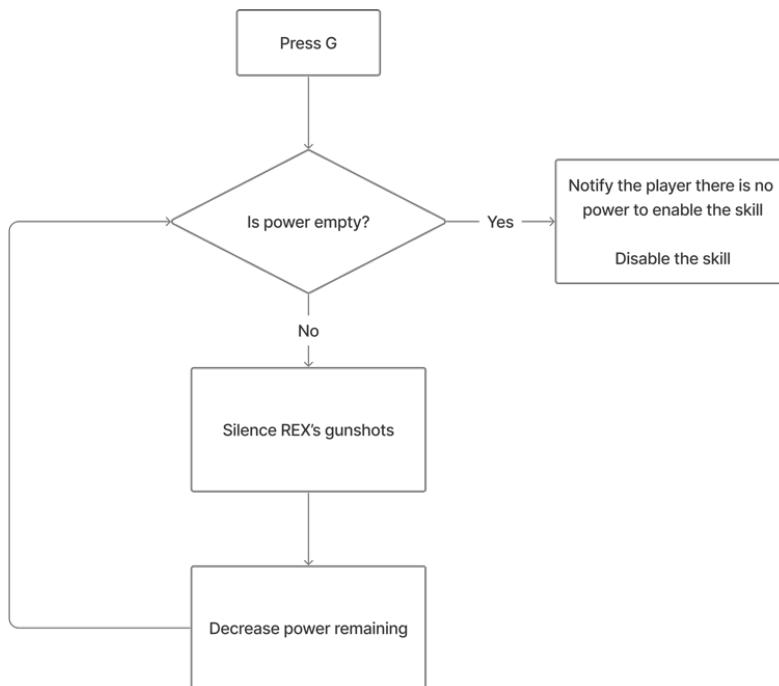
Enable Active Noise Cancellation For A Period:



Rules:

1. There is a power bar on the user interface indicating the power needed to emit the active noise cancellation sound wave.
2. When activating the skill, any gunshots will be silenced until its power needs to be refilled.
3. Can apply to any guns (including machine guns) but cannot be applied to grenades or bombs.
4. Power can be refilled within a period. Refilling process can be speeded up with consecutive killings.

Interaction:



User Stories:

1. As a player who wants to stealth-enter a hallway but wants to kill an enemy in the front without risking detection, I want to silence the gun.
2. As a player who wants to take over a heavily guarded position (e.g., a guarded hostage room), I don't want to attract all the enemy fire on me as soon as I get into the room. Therefore, it is a better option for me to try to deliver high destruction without attracting more enemies. With this skill, I can silence my machine gun for a couple of seconds, which helps me to make as much damage as I can in the beginning.

Challenge for the players (**Balance**):

1. There is a refill time for the skill and the skill can only last for a very short time. The player needs to think about when a better time is to use the skill.
2. The player needs to make sure they kill the enemy, otherwise if the enemy notice the gunshot (e.g., if the enemy is injured but not killed) and start to fire at the player, the player is not able to silence the enemies' gunshots, which will attract other enemies.

Active Skill 2 **differentiation** with traditional silences:

- Traditional silencers are added to specific guns and can be used whenever it is added. However, the new skill can be active within a time constraint.
- Traditional silencers can only be added to compatible guns, while the new skill can also be used on machine guns.
- The traditional silencers are only items, while the new silencer skill can provide players with killing rewards.
- The traditional silencers usually cannot silence gunshots completely, while the new powerful active noise cancellation algorithm can completely silence gunshots.
- The new silencer skill encourages the players to try a more dynamic, paced, rewarding, and skillful play style.

Active Skill 2 **design intent**: The original game has silencers to encourage stealth gameplay. However, the *Blood Dragon* game itself encourages aggressive playstyle. For example, in the game there is no drop damage because REX has a cyborg body. This is actually what most of the players love. The new design is consistent with the original style, as the new silencer skill encourages the players to actively play with pace strategically so that the silencer time can be extended.

Active Skill 3: Multi shots

Description: When using the skill, the current gunshots can be split into three multiple shots that can ricochet on solid surfaces. The skill also needs cooldown time to refill.

Control:

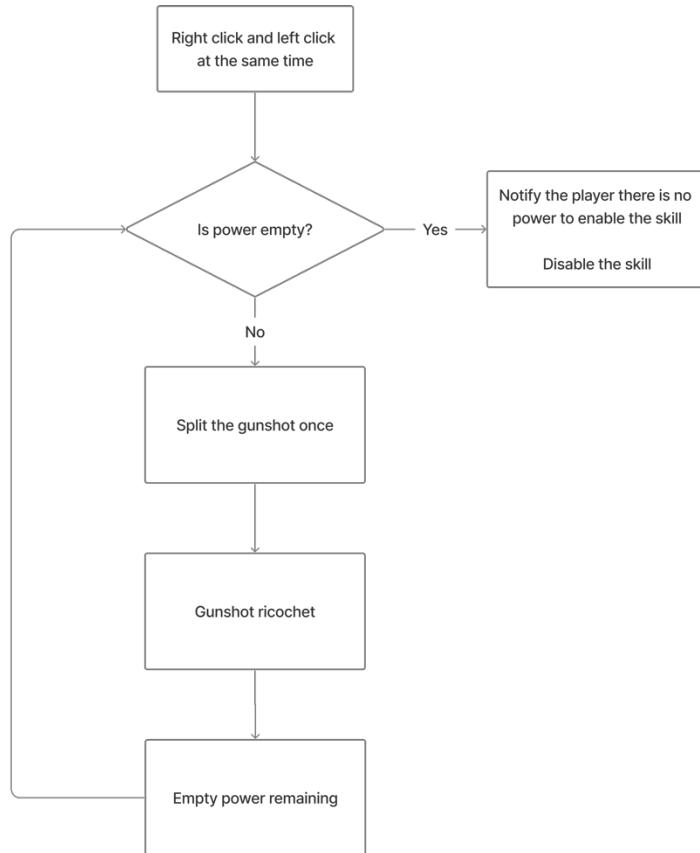
Enable Multi Shots:



Rules:

1. There is a power bar on the user interface indicating the power needed to use multi shots skill.
2. When activating the skill, any gunshot will be split once. Then it can be used again until its power bar is fully refilled.
3. Can apply to any guns (including machine guns) except shotguns but cannot be applied to grenades or bombs.
4. Aiming is disabled.
5. Gunshots can ricochet within a time limit (constraint not on times of ricochet but on the effective time).

Interaction:



User Stories:

1. As a player who wants to enter a room that I know for sure there are multiple enemies in it, I can use the skill once towards the opening door to let multiple gunshots ricochet in the room in order to distract the enemies and cause some pre-fire.
2. As a player who wants to cause damage to enemies behind covers, I may want to use the skill towards the wall beside the cover to either hit the enemy or lure him to go out.

Challenge for the players (**Balance**):

1. The damage of individual gunshot is decreased so that the player cannot use the skill as a reflective bomb.
2. The players need to carefully think about where to deploy the shots.
3. The ricochets cannot be controlled so that it may bring some negative effects. For example, it may cause self-damage or incur unwanted attention.

Active Skill 3 **differentiation** with traditional shotguns / reflective bombs:

1. Traditional shotguns can cause more damage in short distances, while the damage for the multi shots is decreased.
2. Traditional shotguns usually won't have ricochet damages.
3. Reflective bombs have much more damage, which can almost kill every enemy in the room.

Active Skill 3 **design intent**: Similar to previous two skills, this skill is an experimental innovation that trying to apply frontier technologies in games. Based on the setting that REX has cyborg body, it is intriguing to play with such innovative skills.

Active Skill 4: Set Specialized Trackers Using AI sight

Description: The AI sight is the modified version of the original cyber eye vision. When using the AI sight, the player is able to place a specialized tracker on one enemy in combat. When there's no combat, the new character can be seen on REX's side.

Control:

Use Cyber Eye (Same As In The Original Game):



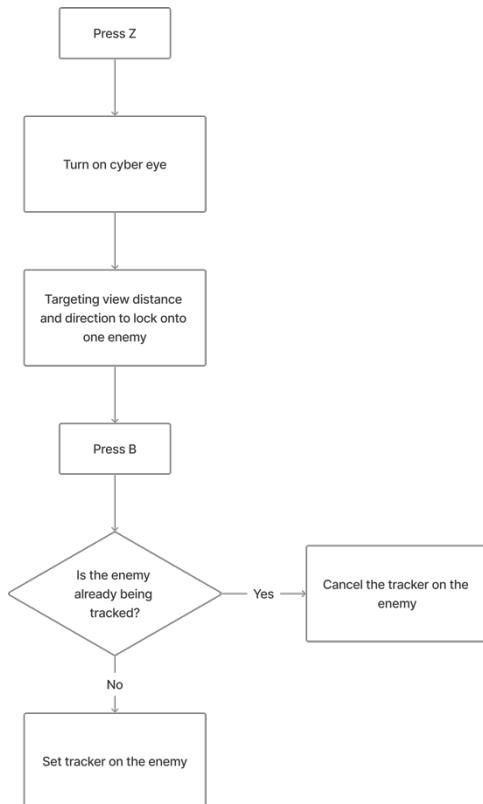
Set / Cancel Specific Trackers:



Rules:

1. Can only set one specialized tracker on one enemy at a time.
2. The tracker will be automatically canceled when the player is not in a combat.
3. The specialized tracker will be highlighted among the original trackers.

Interaction:



User Stories:

1. As a player who need to pay special attention to heavy or sniper units, I can set a tracker on those special individuals in the AI sight. Then when I am playing, I will be able to know their positions and try to avoid them.

Challenge for the players (**Balance**):

1. Players can only set one specific tracker at a time.

2.3 Weaponry and Devices

In **section 2.1**, the design of the character appearance shows that the new character is holding a rotary cannon. However, this is only for visual purposes. Since the character is an algorithm embedded in REX's cyborg body, she doesn't have a corporeal body. The only weapon or device she can use is REX's body. The reason why she looks like holding a rotary cannon is to indicate her power to enable REX to emit powerful sound waves.

2.4 Defensive Capabilities and Movement

As the character doesn't have a corporeal body, there won't be any damages directly made on her. As long as REX is alive, she will be alive. Therefore, the new design won't consider the new character's defensive capabilities such as health and armour. Character's movement will also not be a consideration here.

2.5 Talking to The Character

The only way REX can actively talk to the new character is by turning on AI sight when the player is not in a combat. The play is able to see the character on REX's side and talking with REX. Otherwise, usually the player can only hear the character talking to REX as giving instructions or notifications while playing (similar to the HUD in the original game).

2.6 Gameplay of The Companion

While playing the game, the player can choose to use any **active skills** described in **section 2.2**. Different gameplay styles are also described.

2.7 Accessibility Concerns

Accessibility Problems Identified in the Original Game

As a game published in 2013, when accessibility is not an important aspect to consider as it is today, there are some existing accessibility problems. However, the new design can help improve those problems.

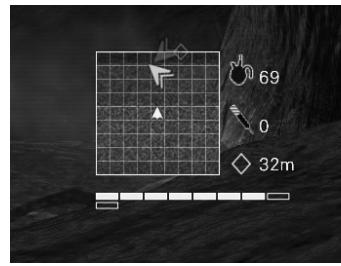
The most significant problem is the color changes on the blood dragon, especially on the map. For most of the players, it is easy to recognize the state of the blood dragons either by telling the colors on the dragons' bodies or on the map. However, for those with visual impairments, only difference in colors can cause them troubles in differentiating the states. As shown in the following graph, the shape of the symbol of blood dragon on the map won't change. The only difference will be the colors. Nevertheless, the difference is not so obvious if the player is color blind (in the bottom two images).



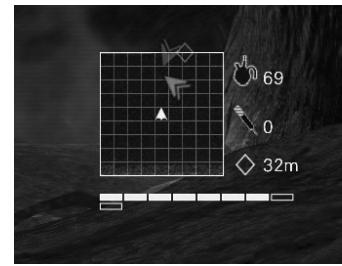
Yellow label of blood dragons on the map in normal colors



Red label of blood dragons on the map in normal colors



Yellow label of blood dragons on the map in black and white



Red label of blood dragons on the map in black and white

Another problem is that the colors used in the game have high saturation, which is easier for nonimpaired players to identify objects. However, players with vision impairment may find it hard to react as quickly as nonimpaired players. For instance, in the following screenshots, it is obvious to identify the enemies in red on blue background on the left, while it is hard to tell what is on the floor on the right one.



Since the new design's focus will be on the system side rather than the peripheral devices, it is assumed that only accessibility concerns without modifications on peripheral devices are taken into considerations. The following will include considerations in three types of impairments: visual, hearing, and cognitive (thought / memory / processing information) impairments.

Accessibility Considerations for Visual Impairments

As a game with strong visual art style that contains lots of high saturation colors, *Blood Dragon* needs to have extra considerations for the experiences of visual impaired players.

Accessibility considered features in the new design:

- When using AI sight, colors will be in gray, except the highlighted ones (e.g., reflection surfaces or predicted sound path when the player is using the sound emission mode, tracked enemies, blood dragons). The gray vision should also use high contrast color schemes to support players with low vision, according to [1].
- Blood dragon's status will not only be different in colors but also in shapes. In addition, in case the player cannot see the label on the map, the sound of the blood dragon will be different and easy to differentiate. For example, when they are calm, the player can hear its breath, but when it is attracted by the player, it will turn to growling. The volume of the sound will indicate the direction and distance between the player and the blood dragon.

Accessibility Considerations for Hearing Impairments

The original game already did a good job in considering the experience of players with hearing impairments. Visual instructions, subtitles, and enemy locations on map are used. However, the new design still needs to pay attention to this.

Accessibility considered features in the new design:

- Make sure every word the new character says can be displayed by subtitle. When the new character is speaking, include the new character's name so that the player can know who is speaking now.
- A power bar will be used to indicate the remaining power and whether the player is using the active cancellation silencer skill.
- The AI (new character) embedded user interface should have an option to display visual cues for environment sounds (e.g., Finding something making a sound in a room).
- The new user interface should include closed captioning for sound effects, such as descriptions of the noise the blood dragons make to inform hearing impaired players the status of the blood dragon ([The blood dragon is roaring irritably], [The blood dragon is growling]).
- Moreover, to further improve the experiences of hearing-impaired players, closed captions will appear at the direction of the sound source. For example, if an enemy is shouting from the left front direction, then the corresponding closed caption will appear at the same direction. (This will be an option in the menu).

Accessibility Considerations for Cognitive Impairments

Cognitive impaired players are those who face difficulties in activities such as concentrating, memorizing, and learning.

Accessibility considered features in the new design:

- The user interface should try to reduce the redundant information, so that it will be easier for the cognitive impaired players to understand.
- The user interface should also be more visual instead text based.
- The controls should be further discussed UX experts to make it more reasonable and user friendly.

2.8 Strengths and Weaknesses

Strengths: Communicates with the main character all the time, won't die while fighting (unless it is the plot or the main character dies), provides several skills that help the player to find an easier or more strategic way to defeat enemies

Weaknesses: Cannot actively engage in fighting, effects still rely on the player's actions, cannot help the player as a single combat unit (synergy)

Balance: All the skills designed in **section 2.2** include discussions on the new challenges for the players. Even though new skills sometimes can make the player's life easier in completing one task, they won't make the entire game much easier for them.

3 Systemic Design Thinking

3.1 Impact on The Original Game

Character interactions: As another important character that will make an impact on the plot, the new character will change the plot as discussed before. Moreover, REX's interaction with other characters will also be different. Before, REX mainly interact with other characters in the plot animation. With the new design, REX can interact with the AI character by using her skills, using AI sight to see the character, and listening to the AI talking to him.

AI reactions: In this case, AI reactions refer to the mechanisms of enemy characters. For example, in the original game, when the blood dragons are searching for goals, their goal is REX, but when using the new directional sound source, their goal may change to the final sound source the player puts on a nearby solid surface. Similar for those cyber soldier enemies.

Level design: In order to enable players to emit sound waves to reflect on solid surfaces, the environment and space near blood dragons need to be further designed so that it is challenging but possible for the users to figure out reflection spots.

Physical simulation and damage: Emitting sound waves will be different as normal gun shots, as sound waves can reflect on solid surfaces. Calculations of reflections of sound waves should be considered. Also, when using multi-shots skill, the behavior of the gun shot will be similar to a shotgun shot, but the damage of each shot will be less, because this skill is to force one shot to break into three. When using this skill, there will also be algorithms to calculate gunshot ricochets.

User interface: In the new design, the user interface will only display the color (stages of the blood dragon) after REX meets the AI character. Also, new AI sight interface should enable the players to set specialized trackers and see the companion character. Other modifications such as accessibility concerns should also be considered when designing the new user interface.

Character stealth: The active noise cancellation sound wave can help REX hide from enemies. In the original game, character stealth mainly used to avoid attacks from the blood dragon. With the augmented user interface, the user can use character stealth to hide from blood dragons, attract blood dragons, hide from other enemies, silence gunshots, and set specialized trackers on the enemies.

3.2 High Fidelity Prototype Task List

Tasks	Assignees
Detailed character appearance design and modelling	Character designers
Detailed interaction design	UX designers and game designers
Detailed accessibility design	UX designers and game designers
Update user interface design according to the new features	UI designers, UX designers, and game designers
Finalize controls for new skills	UX designers and game designers
Interaction design low fidelity prototype	UX designers and UI designers
Modify the plot	Game writer, the director, and game designers
New plot animation	Animators, designers, and the director
Update level design according to the new features	Level designers
Modify AI algorithms (for enemies and blood dragons)	Developers
Update character status algorithm (add skill powers attributes, etc.)	Developers
Update physical simulation and damage calculation methods	Developers

4 Differentiation

4.1 Commercial Value

When considering whether a new design should be implemented, another factor that needs to be considered is its commercial value. Unique, novel play mode, and enriched plot may attract more players or audiences even though not every player is a fan of classic sci-fi and knows about the visual styles. One of the reasons why Far Cry 3 is favored by players is its fantastic plot and character designs. As a DLC of Far Cry 3, adding similar elements will help the game to attract more players.

4.2 Uniqueness of The Character

- First to introduce cutting-edge acoustic technologies such as reflective sound speakers and active noise cancellation in sci-fi games.
- New play mode of fps games (such as placing reflection points instead of throwing items for attraction) described in **section 2.2** and **section 2.5**.
- An independent, rational female character who is willing to sacrifice for what she believes in in a traditional sci-fi setting that from time to time ignores the powers from women.

5 Conclusion

To conclude, this document designs a new companion character for *Far Cry Blood Dragon*. The new character is an AI algorithm embedded into REX's cyborg body. The new character has astonishing calculation power that can help REX to emit strong sound waves, which can result in skills such as reflective directive sound waves, active noise cancellation silencer, multi shots breaking wave. Aspects include design goals, intent, vision, detailed designs of character appearance, functionality, ability, controls, interactions, movement, weaponry / devices, defensive capabilities, gameplay, experiences, accessibility concerns, strengths, weaknesses, balance, systemic design thinking, and differentiation are described.

The new companion character is unique in a way that it is no longer a single ally combat unit but rather an important character involved in the plot who has independent character and thinking. This new notion of companion characters become more and more popular in recent games, such as Johnny Silverhand in *Cyberpunk 2077*. Nevertheless, few of them really can help the main character in combats. Moreover, I believe that it is worth to explore frontier technologies in games, especially sci-fi games, to not only provide the players with interesting new gameplay experiences but also a chance to experience something that cannot be fully achieved in reality yet. Hence, I hope this design idea can be an innovative and commercially successful one that experiments with brand new gameplay modes.

References

Online Picture Reference Links

- Fig 2.1: [https://doomwiki.org/wiki/Chaingun %28Doom 2016%29](https://doomwiki.org/wiki/Chaingun_%28Doom_2016%29)
- Fig 2.2: https://clonetrooper.fandom.com/wiki/Z-6_rotary_blaster_cannon
- Fig 2.3: <https://www.anothermag.com/fashion-beauty/10961/the-bioengineered-femme-fatale-who-inspired-fendis-aw18-show>
- Fig 2.4: <https://www.vintageinn.ca/2018/09/1940s-real-life-womens-hairstyles/>
- Fig 2.5: <https://www.pinterest.ca/pin/578008933442957160/>
- Fig 2.6: <https://www.pinterest.ca/pin/318981586083712491/>
- Fig 2.7: [https://animations.fandom.com/wiki/Ghost_in_the_Shell_\(1995_film\)](https://animations.fandom.com/wiki/Ghost_in_the_Shell_(1995_film))

Academic Paper References

- [1] Yuan, Bei, Eelke Folmer, and Frederick C. Harris. "Game Accessibility: A Survey." *Universal Access in the Information Society* 10, no. 1 (March 2011): 81–100. <https://doi.org/10.1007/s10209-010-0189-5>.