

Valence User Testing

Technical Approach and Implementation

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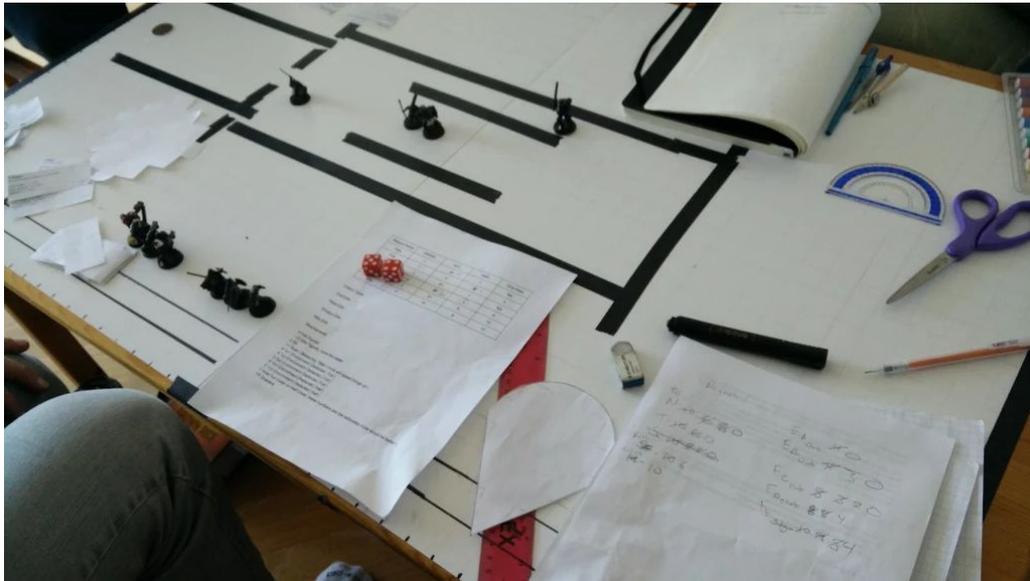
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Accessibility / Learnability ~ A major point of feedback, and something that became increasingly evident from the questions, and concerns received throughout play session is how easy it is to learn the game. In fact 80% of members described the game as complicated in an anonymous survey. Yet we found players were able to learn the rules, objectives and general turn structure within a few turns of play. Most of the questions were about enemy behaviour and perception, particulars of friendly unit movement ranges, and questions regarding how much damage a player's attack would do given stat modifiers. These dynamic elements change frequently under many conditions and can be hard to keep track of as a player.



Potential Solutions:

- **Simplify Stats** ~ by making unit stats uniform players will be able to develop an understanding of the games systems, without any variable that change it dynamically. The downside of this is that units will no longer have distinguishable traits, and players would treat units less like individual characters and more like generic members of a mass.
- **Communicate Dynamic Information Through Visual Indicators** ~ by developing ways in which players can easily visualize the dynamic elements of the game players will be able to quickly infer information, rather than having to remember and recall specific about their characters, and the enemy units. Examples of this would be; displaying movement / attack range on the grid when a unit is selected, displaying enemy perception ranges on the map, highlight enemy information on the screen (such as equipment and health).

Scenario Length ~ The average game completion took between 15-25 minutes. The sole outlier in this data was Jake's experience on the map *Elite Outpost*, which took 1 hour and 30 minutes to complete.

Jake tended to play the most conservatively out of the group, was most willing to retreat when things went wrong, and spent the most time deliberating about decisions. From this we can ascertain that a major influence on play session length will be player personality.

In an effort to reduce session length, we doubled the minimum movement distance of individual units. Interestingly this gave the perception to players that the game was progressing faster, however the sessions in which this change was present saw no significant reduction in completion time. We believe further testing is needed in a more controlled manner to prove this definitively.

Map Preference ~ Based on feedback discerned from the anonymous survey, map preference was unanimously in favour of a map called *Elite Outpost* (figure 1 below). *Elite Outpost* was a map designed to be symmetrical, with dense cover and higher enemy concentration in the center of the map, and open areas with less enemies near the borders.

Group member feedback pointed to the map having a larger possibility space, and never restricted the player to a particular playstyle as reasons why they preferred this map over the others.

Additionally we feel as though the nature of the way the border of the map was designed gave players a safe zone of sorts. The safe zone allowed players to navigate about the map, plan out strategies in a lower risk environment and also provided them with a safer path for retreat (in the event that things went poorly for the player).



Figure 1: Elite Outpost map

Player Experience ~ With this component of Valence our hope was to create a gameplay experience that was more instantly rewarding, allowed players to interact directly with the game systems, and become familiar with their units. In an anonymous survey group members described the prototype as 'Tense', 'Rewarding' and 'Exciting'. When watching the game players agonized over decisions that could cost a unit direly, the group cheered when a unit narrowly escaped defeat, and gasped when a favourite unit bit the dust. We believe the game is successful in evoking appropriate emotions from the player in this regard. The combination of distinguishable units placed in a high stakes environment, where units can be lost forever with a single poor decision, is critical to creating this experience. Additionally, random elements (such as likelihood to successfully attack an enemy) meant players could never be completely confident with a decision and at times push for riskier encounters with the promise of greater rewarding moments. This in turn lead to even more tense decisions and exhilarating gameplay.

By effectively emulating the experience of 'rolling the dice' in the final version of Valence should aid in preserving these moments of tension.

Player Progression ~ Player progression received its first implementation during this round of user testing. Our team had players begin the game without access to any kind of ranged weaponry (no guns, only melee combat). With the successful completion of each scenario, players had a chance to receive a new weapon (melee or ranged), new units, and currency rewards.

Players reacted positively to these features. The group was elated when they received a particularly powerful weapon after a tough scenario, and were downtrodden when they didn't receive any new units after a scenario that saw a large number of friendly casualties.

An interesting note about the reward structure, after a player's first encounter with reward system, players began reevaluating their strategic approach to the game. For example, if the player had lost a good chunk of their unit size by sacrificing them in hopes of completing the objective more easily. Having then completed the mission, if the player did not receive any additional units, and found themselves with a significantly smaller population going into the next scenario, They remarked that they would now play the game more conservatively given that they were aware of the consequences of their approach.

Enemy Perception ~ When conducting the play session our group replicated the enemy unit's ability to operate on a hierarchy suite of actions, and act on these behaviours consistently (a list of these actions can be found at the end of this document). This play session gave insight regarding certain elements of Enemy Perception.

1. **Enemy Vision** ~ Enemies had a perceivable zone in front of them which was represented by a cone, with a 90 degree arc, extended by 6 inches from the base of the unit. Due to the nature of this arc however, enemies had a very narrow perceivable view with no peripheral vision, and it was possible for enemies to lose sight of units within close proximity. To solve this we will to give enemies a wider base arc, providing them more peripheral vision, resulting in an improved situational awareness.
2. **Enemy Hearing** ~ Enemies also had a perceivable zone, this extended in all directions by approximately 3 inches (this represented an area of hearing). While this implementation was realistically improbable, as it treated all noises equally. Players could fire weapons from far outside an enemies hearing range with little to no consequence, in addition to disregarding occluding objects. This will be address by generating an audio radius relative to the size of the noise, originating from the base of the player unit, which can alert any enemy units within its perimeter.

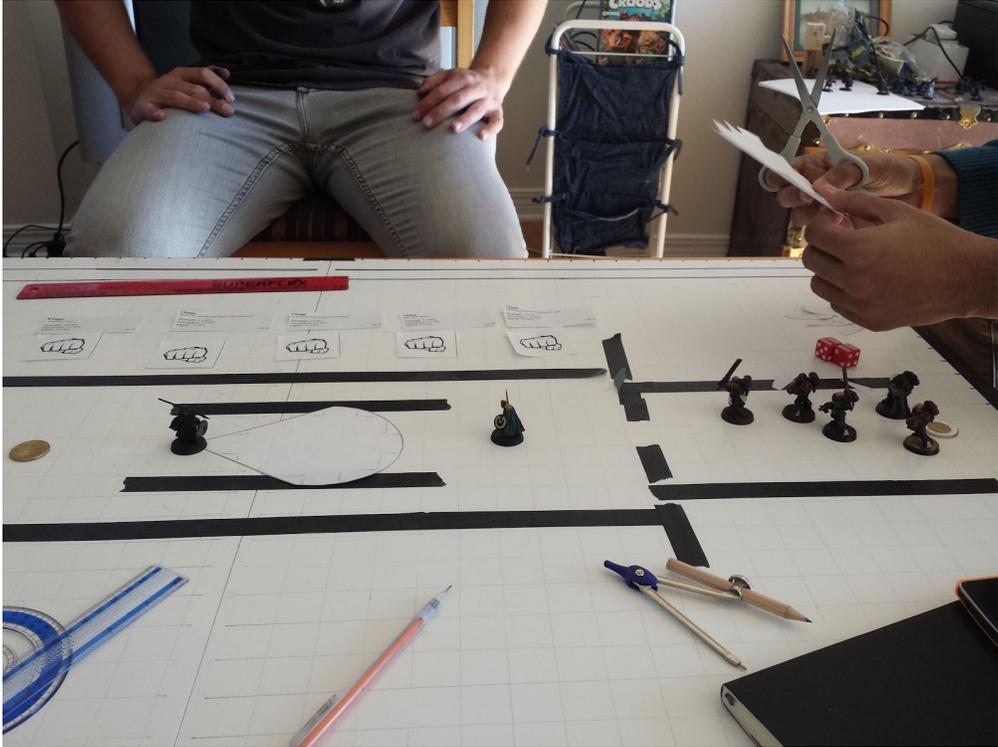


Figure 2: Enemy cone of vision

Enemy Priority Hierarchy:

Priority	Condition	Action
1	Multiple Player Units are within Attack/Movement Range, and A's health is \leq Enemy Attack	Move and Attack Player Unit A.
2	Multiple Player Units are within Attack/Movement Range, and Player Unit A is in possession of the Scrap	Move and Attack Player Unit A
3	Multiple Player Unit's are within Attack/Movement Range, and Player Unit A has the least health of all player units within range.	Move and Attack Player Unit A
4	Multiple Player Unit's are within	Move and Attack Player Unit closest to

	Attack/Movement Range, and 2 or more units have the least health of all player units within range.	Position.
5	A Single Player Unit 'A' is within Attack/Movement Range.	Move and Attack Player Unit A
6	No Player Units are within Attack/Movement Range. However multiple positions of interest are known.	Navigate to most recently perceived position of interest.
7	No Player Units are within Attack/Movement Range. However a position of interest is known.	Navigate to most recently perceived position of interest.
8	No Player Units are within Attack/Movement Range. No Positions of Interest Exist. Enemy unit is currently not in default patrol route.	Navigate back to default patrol route.
9	No Player Units are within Attack/Movement Range. No Positions of Interest Exist. Enemy unit is currently in default patrol route.	Conduct default patrol route