Feature doc: Roll

# Executive Summary –

## Goals:

* + The roll will give an additional bit of horizontal traversal to the player, but it must feel different than the normal run.
  + It should be a defensive and positioning tool.
  + It should not be something that replaces run: there should be obvious drawbacks / different pros & cons to both.

## High Level Summary:

* + The roll acts as a quick dash. However, since the character must **roll** it will be a move that can be used only on land (not in mid-air).
  + Rolling should have an appropriate cooldown, to avoid making it spamable. It is however a player power meant to be used several times in combat: as such, it’s exact cooldown should be found through iteration (TBD, for now we will assume that the player must have enough time to shoot twice with the normal gun before being able to roll again).
  + The roll makes the player character’s mesh smaller, making it harder to land shots.
  + The initial phase is fast, making it useful to dodge projectile or rapidly zigzag between covers, but the finishing phase should be slow. (This means that on long distances, running should be faster than constantly rolling. But for a short distance, rolling should be faster than running).
  + The distance a roll cover should be equal to the player character’s mesh height. (TBD)
  + Rolling is used to dodge and get out of sticky situations, as such momentum does not apply to rolling. (running forward and suddenly rolling backward will not end up in both momentum clashing. The forward momentum is immediately canceled, while the backward momentum of the roll starts at full power right away).

# Feature breakdown –

## Controls:

* + Pressing shift will perform a roll straight ahead (facing the character’s forward direction).
  + Pressing shift while holding any movement button (WASD) should roll in the direction of the movement (exemple: shift+W roll forward but shift+A rolls toward the left, even though the camera is aimed toward the same direction in both cases. Cardinal direction, such as pressing W+A, also works.)
  + Pressing shift while in Midair simply makes a sound cue, warning the player that rolling midair is NOT possible.

## Mechanics:

* + Disable rolling when the player is midair (if a player rolls out from a platform, the rest of the roll animation should continue in midair, but rolling again is of course disabled).
  + Implement the cooldown of the roll. It should be approximately the same amount of time it would take to shoot twice with the normal gun (TBD)
  + Rolling should happen immediately when the player press Shift.
  + The roll but be performable in different direction, however as soon as the player rolls all momentum from all direction is canceled (except gravity of course) and then the momentum of the roll is immediately applied).
  + The roll speed should be twice the run speed at the initial phase. Once the roll is finish, there must be a short vulnerability frame where the player’s character is slow, and he has to finish the roll animation before being able to move again (duration of the vulnerability frame + the amount of the slow is TBD and to be iterated)
  + The mesh of the character should be smaller at the initial phase, and the collision should reflect that. During the vulnerability phase, the player character goes back to normal and collision too.
  + Rolling in the lava goo puddle of the lava gun should apply the full lava goo puddle slow (reference the LAVA GUN feature doc)
  + Rolling in a wall ends the initial roll phase and goes directly into the vulnerable phase.
  + Rolling into an opponent does nothing. The engines physics handles both collisions and their trajectories.

## Visuals:

* + The roll should be composed of two states: an initial animation where the character actual tucks his arms and legs in to perform the roll, meaning visually the character is not actually smaller but he is tucked in a ball, making him smaller (which would fit the collision size of the roll).
  + The second animation shows the character getting out of the roll and getting back up. He goes back to normal (standing straight and stretched out from toe to head).

## Sound Effects:

* + The character grunts as he performs a roll. It must sound like a serious, concentrated grunt.
  + The roll makes a rolling sound (sound of a body softly hitting the ground multiple times).
  + There should be a sound effect for when the player tries to roll in midair. It must be an obviously negative sound, directly communicating to the player that this action isn’t possible.

## Challenge & Connections:

* + The roll must influence the slow applied from the lava goo puddle from the LAVA GUN feature doc.

## Backstory:

## As monks of the volcano island, praying was a normal part of their routine. Continuously bowing down until their head touched the ground gave the monks an incredible flexible body. The most experienced of them learned the more advanced praying technique: the roll. This technique allowed them to bow with their head touching the ground and stand back up so fast that they were able to pray several thousand times per day.

The reward of such a fervent way of praying was the ability to pray in and on itself. There was no greater joy for these monks than to “proll” for their deities (“proll” is a term used by the monks, mix between “prayer” and “roll”).

Flags: