King of the Hill

Introduction:
The game involves the interaction between a human player and a quadricopter robot player (i.e. ARDrone), but can easily evolve to a multiplayer game.
The game is a real life adaptation of a type of multiplayer game found primarly in the video game series 'Halo', usually known as 'king of the hill'. In this variation only one opponent, the robot, searches for hills while the other one tries to stop it.
Both players can shoot to lower the score of the opponent. The human player has to wear a target jacket that has markers on both the front and the back and to use a Wiimote as a weapon. When the human player shoots, the Wiimote plays a shooting like sound, when he or she is hit, the Wiimote vibrates for a short period of time while, when he or she hits the robot, the Wiimote plays a blast like sound and the robot makes a quick descending movement followed by a slow ascending one. The human player has to recharge his or her weapon at recharging stations in order to keep shooting, while the robot has unlimited ammunitions.
The aim of the game is to prevent the robot from finding various hills placed randomly in the playing field. The user can prevent the findings by hiding hills with his or her body from the robot's sight or by shooting at the robot.

Playing field:
The game can be played both outdoor and indoor. The playing field is defined by placing a cardboard parallelepiped on the center of the field, generating a circular playing field with origin on the parallelepiped itself. The size of the playing field can be adjusted before the start of a match.

Weapons:
The human player uses a Wiimote as weapon with which can point towards the front of the robot and press the trigger to shoot. The weapon has a limited ammount of ammunition and need to be recharged, when empty, at recharging stations. To keep track of the number of ammunition left, the 4 blue led on the Wiimote are used. When there are no ammunitions left all 4 blue led are turned off and the Wiimote plays a specific sound, if the trigger button is pressed. To recharge, The Wiimote need to be pointed towards a triangular shaped series of 3 led (i.e. recharging station) and the A button pressed.
The robot player uses its front camera to find targets and shoot.

Recharging stations:
A recharging station is defined by a triangular shaped series of 3 IR led placed inside a box on the playing field. The number of recharging station needs to be calibrated and depends on the size of the playing field and the difficulty level selected.

Hills:
A hill is defined by a squared piece of cloth of a solid color of aproximatly 30cm x 30cm. The hills can be placed everywhere inside the playing field, but need to be clearly visible from above. The number of hills depends on the size of the field and the difficulty level selected.

Target Jacket:
A target jacket should be similar to a protective jacket or a bike armor to provide an easy recognizable support for markers and to help the user feel immerse in the reality of the game. The jacket has a front marker and a back marker that are used as targets by the robot.

Aim of the game:
Prevent the robot from finding and becoming the king of the hills, placed randomly inside the playing field. The robot became the king of a hill after being above one, in stationary fly, for a short period of time.

Main rules:
The human player wears a front marker and a back marker, that provide a target for the robot.
The human player can shoot to the front of the robot using the Wiimote.
The human player has a limited amount of ammunition, but can recharge his or her weapon by pointing the Wiimote towards a recharging station (i.e. a set of led in a specific shape).
The human player can't move or hide the hills after the match start.
The human can stand in front of a hills, but this exposes him or her to the robot's fire.
The drone starts a match on top of the cardboard parallelepiped and return to it when the match finishes.

Score:
The human player gains point by hitting the robot, looses point by being hit by the robot.
The robot player gains point by flying above a hill, looses point by being hit by the opponent.

Duration:
A game match lasts 5 minutes.

Winner:
The winner is the player with the top score.