

Sample essay on the score of every ugv will highly depend on the project performa...

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The customer requires a device that can deliver a payload of water to the point that is some height above ground level. The device is for use in a fire-suppression application. The effectiveness of the device will rely on the performance in emergency situations.

The fire suppression systems are made of extensively pressured piping and nozzles. Following the expensive nature of installing the networks, the unmanned ground vehicles (UGVs) are preferable. A number of simple and inexpensive UGVs will be required in the project.

The reliability of the result of the test will rely on the alarm that will be used in setting the test to start, and no human or remote assistant is needed.

Within a 60 m distance of the staging area, the UGVs will be required to overcome the obstacles and debris scattered. For the effectiveness, the UGV must be within 10m of the centreline of the transit area. For higher prove of its effectiveness, the UGV must repeat the mission successfully.

The UGV that is recommendable must meet the necessary standards and must not exceed 20kg with a minimum charge of 5kg of suppressant. The UGV must fit a 1m cube mission start and finish. The UAV velocity must not be more than 8 km/h.

The control of the project must take place within the mission control stage.

The mission abort system must indicate any 200 m movement of the UGV to any direction.

The safety measures of project require a stage that is free from toxic materials and must be easy to indicate a crash. The UGV is mainly lit by a flashing white beacon light that is at least 20 cm above the highest component of the UGV. All unnecessary materials must be kept off the

project.

The test mission of the project must be a secretive area without consideration of the weather conditions and alternatives will be available if the weather conditions become unfavourable. The testing area must be 60 m long, 20 m wide for the transit area and 30 m long, 20 m wide for the target area.

All the roadworthy UGVs must be tested in the same testing site. Proper conditions like fixing the UGV to the ground must be considered. However, the grounds will not be disclosed till the competition time. Vertical obstructions have maximum height of 7 cm with the ground inclination of 20 degrees.

The alarm signal will be key in measuring the proper start and ending of the process. Since the sounding of the alarm triggers the functioning of the UGV any manual or remote controlled sound to trigger the UGV will lead to penalty. Mission time depends with the sounding period of the alarm signal. The above measures must be followed to ensure a rectangular tub that is approximately 600 × 400 mm with side walls of 0.6 m maximum height. The tub must be positioned somewhere near the target line.

Although the UGV enters the target area, it must not violate the restriction space within the transit area. The UGV is allowed to participate in another mission staging area if it successfully completes the previous test.