Triton AI - RobotX
Drone Object - UAV Replenishment
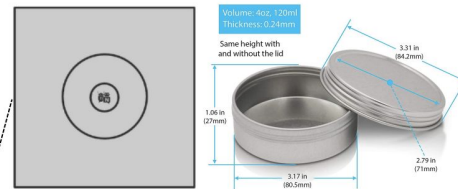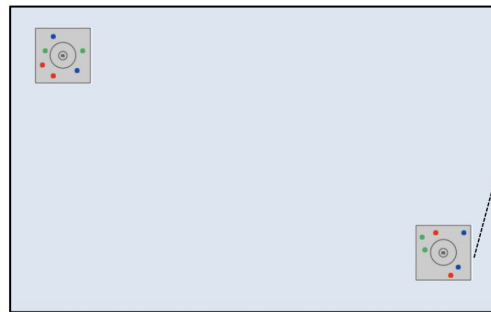
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UAV Replenishment

Task 7

- This task is designed to be accomplished by a UAV.
- The UAV launches from the USV, locates a floating helipad, and collects a small colored tin (red, green, or blue).
- The UAV delivers the tin to the circular target area on another floating helipad, then returns to the UAV.
- This task will be available on land for practice.

Heartbeat Message: Additional points available for reporting AMS activity.

ADCS Dynamics: Alec Digirolamo, Daniel Sanei, Carson Rae, Soumi Chakraborty

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STUDENTS BRING HOME EXPERIENCE, AWARDS FROM

ROBOTX MARITIME CHALLENGE IN SYDNEY

December 14, 2022-- Six UC San Diego engineering and data science students were on the ground in Sydney, Australia in November, as their team put the autonomous boat they've been developing all year to the test in the Maritime RobotX challenge. The UC San Diego students, leading a larger team which also included several San Diego high school students, were awarded Best Design Presentation; Best Team Introduction Video; 2nd place in Design Documentation; and Excellence in Logistics Compliance.

ADCS Dynamics: Alec Digirolamo, Daniel Sanei, Carson Rae, Soumi Chakraborty

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Project Overview

1 Purpose: Develop a reliable autonomous drone system

2 Tasks: Take off, land, and manipulate objects

3 Technology: Integration of sensors and flight control systems

UAV - *Unmanned Aerial Vehicle (Drone)*
USV - *Unmanned Surface Vehicle (Boat)*

2.5.8 Task 8 – UAV Replenishment

This task is designed to be accomplished using a UAV. The UAV launches from the USV, locates a floating helipad and collects a small colored tin (see Figure 12). The UAV delivers the tin to the circular target area on another floating helipad, then returns to the USV.
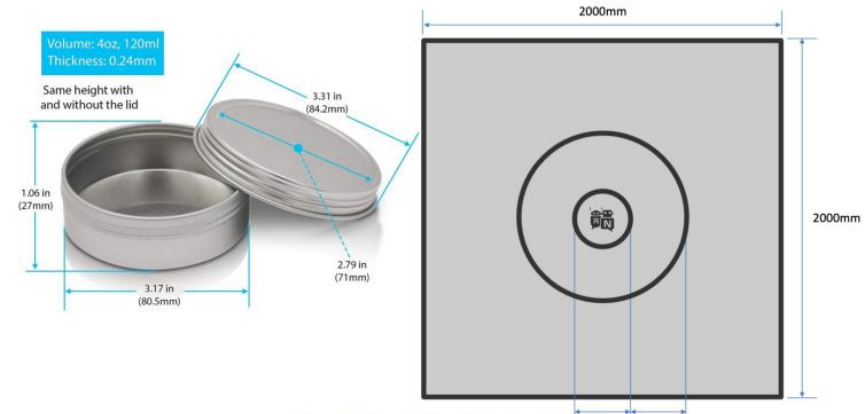
Volume: 4oz, 120ml
Thickness: 0.24mm

Same height with and without the lid

1.06 in (27mm)

3.31 in (84.2mm)

2.79 in (71mm)

3.17 in (80.5mm)

2000mm

2000mm

Figure 12: Colored Disk and Preliminary Helipad

Final Deliverables

$\Rightarrow$ Fully functional autonomous drone system

$\Rightarrow$ Flight control system software

$\Rightarrow$ Sensor and camera integration

$\Rightarrow$ Successfully complete RobotX UAV Replenishment task

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Final Deliverables

→ Fully functional autonomous drone system

→ Flight control system software

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→ Successfully complete RobotX UAV Replenishment task

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Thank you!

Triton AI – RobotX