

Innovation Works Co., Ltd.

Milestone 2

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Security Infiltration Drone

EG1003 A2

Agenda

- Project Objective
- Background Information
- Technical Design Description
- Cost Estimate
- Project Schedule
- Teamwork Agreement
- Summary

Mission Statement

- To become a top-notch robotics company whose products make people work more easily and live better.

Project Objective

- Security Infiltration Drone (SID)
- Move over a route, **scan barcodes** to open gates, get **data canister**
- **Deliver canister** to point, go to **exit**

Background Information

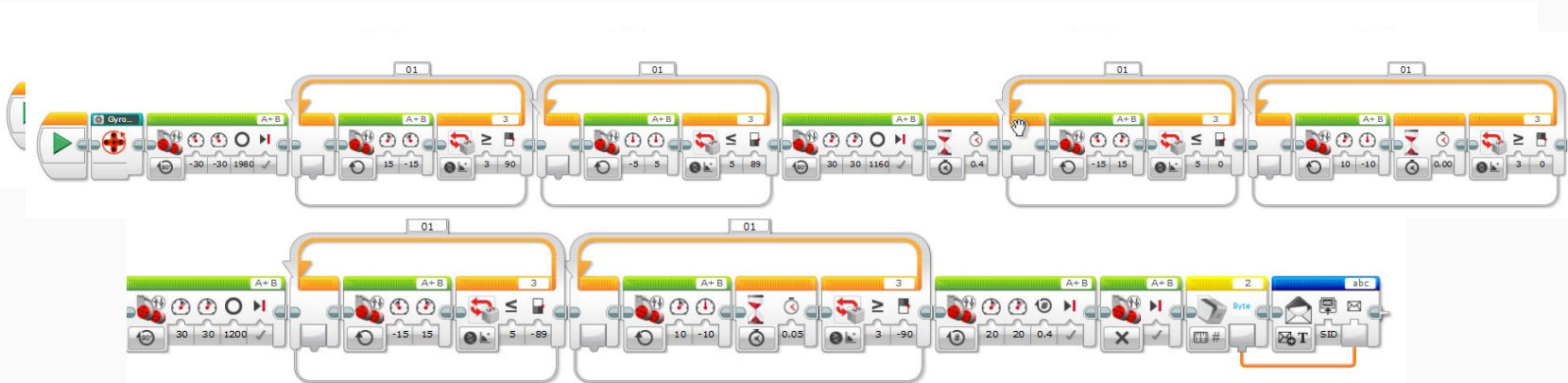
- The Central Intelligence Agency (CIA)
- Requesting a robot to **infiltrate building**, **retrieve data**, and **exit**



Seal of the CIA

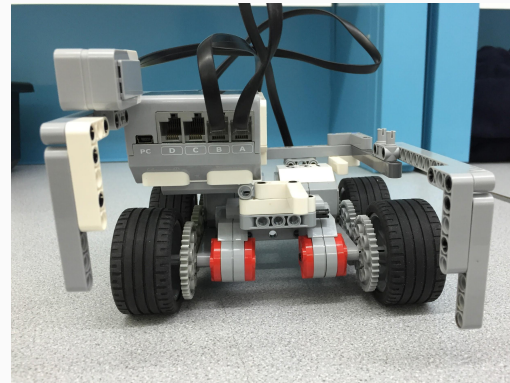
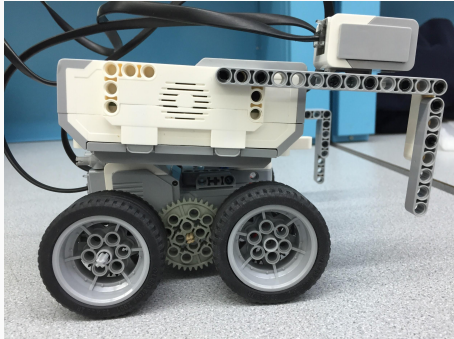
Technical Design Description

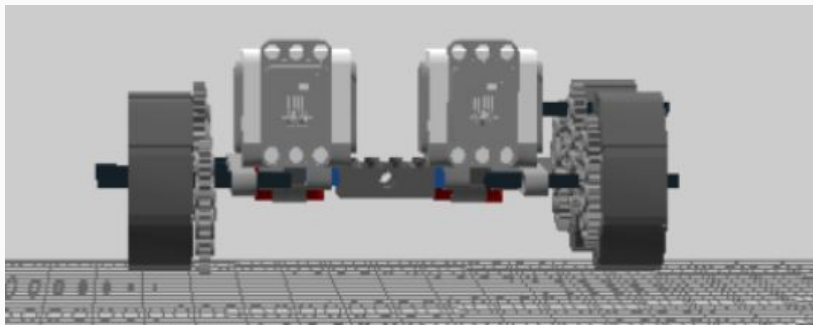
- Uses Gyroscopic sensor to perform 90 degree turns
- The robot is hardcoded for distance
- Tall and slim robot that incorporates barcode reader



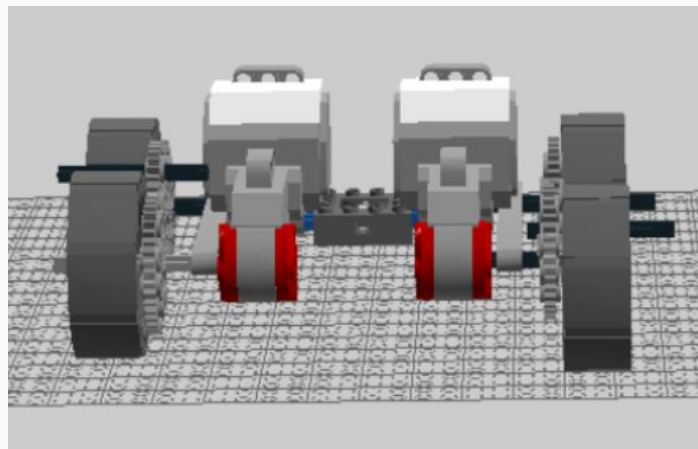
Technical Design Description

- Design changes
 - **Obstacle**: could not climb ramp
 - Added 2 **tires**; 4 tires in total
 - Added 6 **gears**

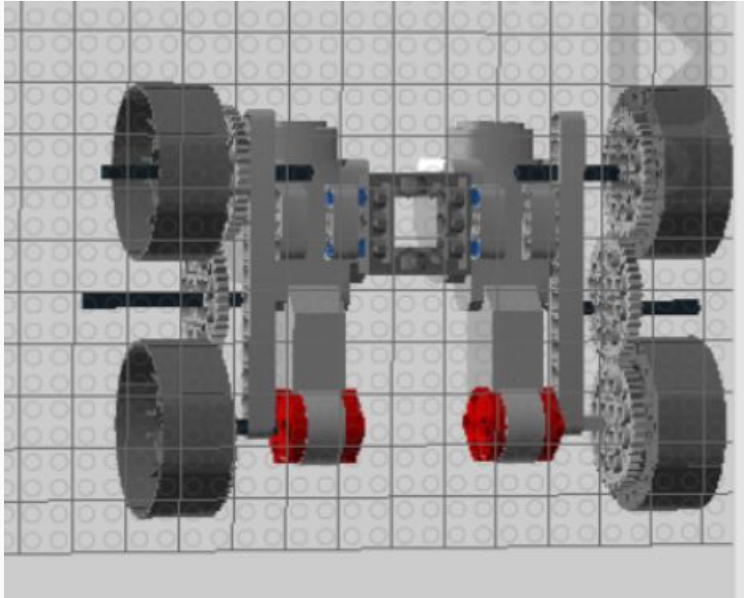




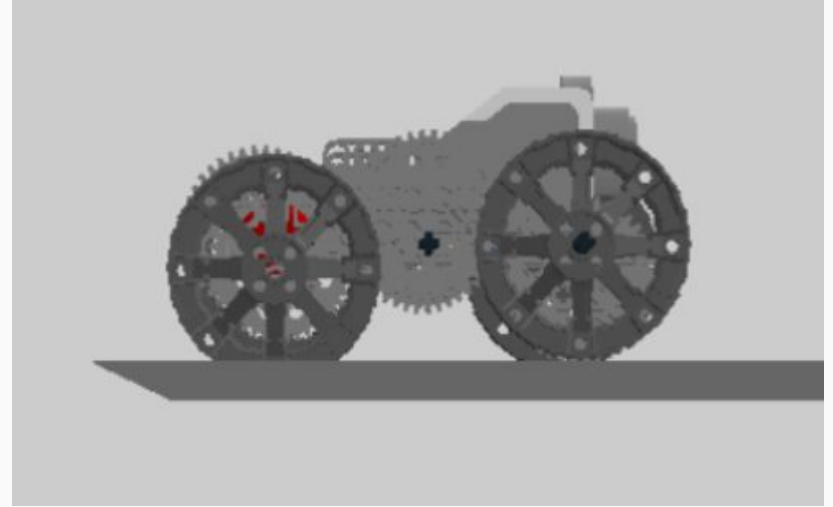
Front View



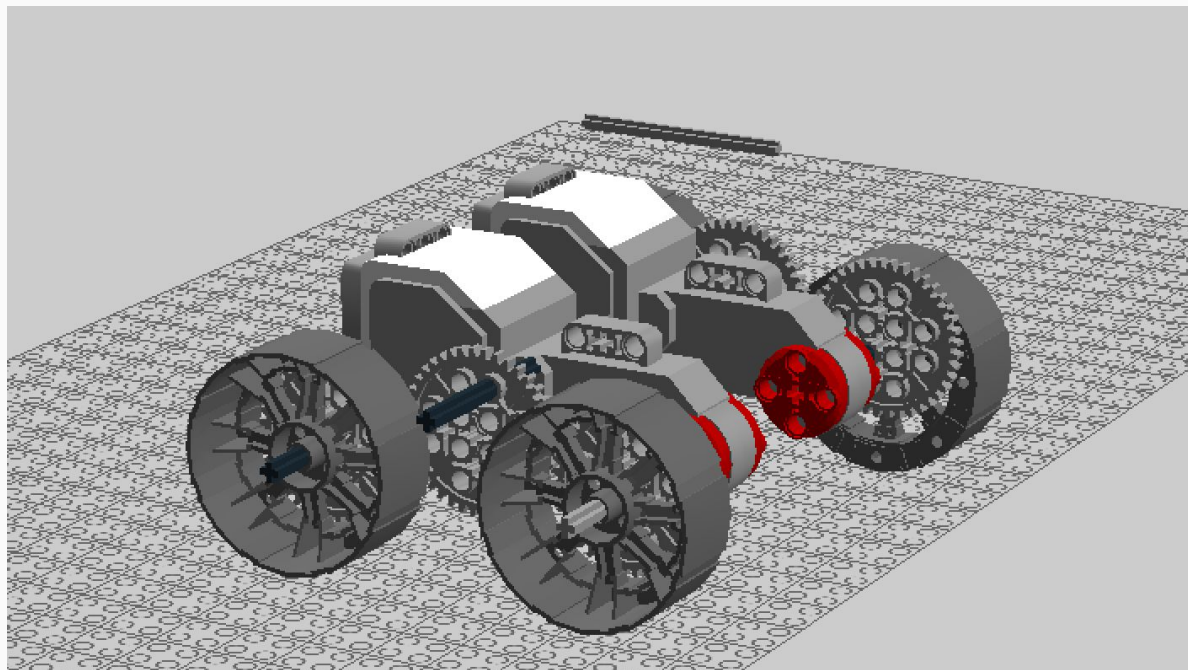
Most Detailed Side



Top View



Gear Train View



Isometric View

Cost Estimate

No.	Part No.	Item	Quantity	Unit Cost (USD)	Unit Total (USD)
1	1337	Barcode scanner	1	350	350
2	55969	Electric, Sensor, Light - NXT	1	165	165
3	45505	Electric, Sensor, Gyro – EV3	1	350	350
4	45503	Electric, EV3 Medium Servo Motor	2	150	300
5	45502	Electric, Motor EV3	2	218.2	436.4
6	6594	Tyre 49.6 x 28 VR	2	5.1	10.2
7		Miscellaneous			20
		Total			1631.6

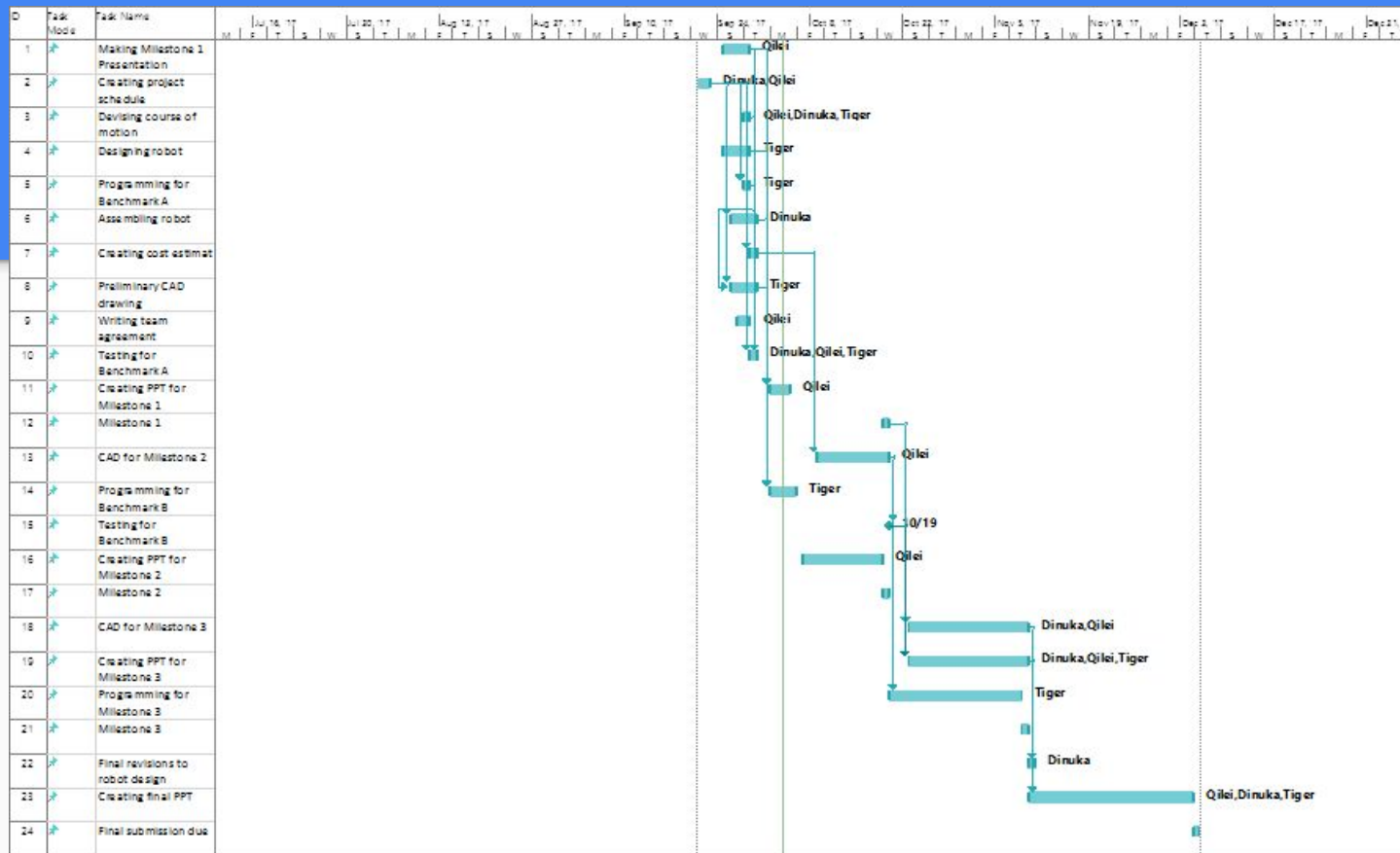
Previous Cost Estimate

Cost Estimate

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5	45502	Electric, Motor EV3	2	218.2	436.4
6	6594	Tyre 49.6 x 28 VR	4	5.1	20.4
7	3649	Technic Gear 40 Tooth	6	9.7	58.2
8		Engineers' salaries per hour	20	50	1000
9		Miscellaneous			20
		Total			2700

- Added 6 gears and 2 tyres
- Total increased to \$2700

Project Schedule



Previous Project Schedule

[illegible]

Project Schedule

- Plans postponed due to design obstacle
- Added time to redesign
- Programming and testing postponed
- Tasks for Milestone 3 postponed

Summary

- Current status
 - **On track** to complete Benchmark B by deadline
 - On budget
- Milestone 3
 - Modify robot design if needed
 - Update cost estimate and project schedule
 - CAD drawing of latest design

Bibliography

NYU Tandon School of Engineering. 2016. "Security Infiltration Drone." EG 1003 Online Lab Manual. Accessed October 18, 2017 from egmanual.poly.edu.'