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EE 41440 Senior Design

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Design Review 3

I. Subsystem Demonstration

All essential functions of the system work. This will be demonstrated during the weekly meeting via the panorama and video from the most recent launch.

II. Bill of Materials

	Quantity	Per-Unit Cost	Total Cost
Power Boost 1000 Basic- 5V USB Boost @ 1000mA from 1.8V+	2	\$14.95	\$29.90
Raspberry Pi 3- Model B	2	\$35.00	\$70.00
SMA to uFL Adapter Cable	2	\$3.95	\$7.90
Li-ion Battery Pack- 3.7V 4400mAh	2	\$19.95	\$39.90
Micro B USB to USB C Adapter	2	\$1.25	\$2.50
Simple Spring Antenna 915MHz	2	\$0.95	\$1.90
16GB SD Card w/ NOOBS 3.1 for Raspberry Pi	2	\$14.95	\$29.90
Adafruit LoRa Radio Bonnet w/ OLED- RFM95W @ 915MHz	2	\$32.50	\$65.00
Raspberry Pi Camera Board v2- 8 Megapixels	4	\$29.95	\$119.80
Raspberry Pi Camera V2 ¹	8	\$12.50	\$100.00
Wide Angle Lenses ²	6	\$30.00	\$180.00
Adafruit LoRa Radio Bonnet w/ OLED- RFM96W @ 433MHz	2	\$32.50	\$65.00
Extra-long breakaway 0.1" 16-pin male header strip (5 pieces)	2	\$3.00	\$6.00
Servos	4	\$31.99	\$127.96
Arduino Nano	1	\$20.70	\$20.70
ADXL345 Triple-Axis Accelerometer	1	\$17.50	\$17.50
2000 Series Dual Mode Servo	6	\$31.99	\$191.94
Quarter-Wave Whip Antenna @ 433 MHz ³	1	\$0.00	\$0.00

Dipole Antenna @ 433 MHz ANT-433-CW-HWR-SMA ³	1	\$0.00	\$0.00
			0
			0
Taxes		\$17.29	\$17.29
Taxes		\$16.03	\$16.03
Shipping		\$27.56	\$27.56
Totals	52	\$394.51	\$1,136.78
NDRT Total		\$251.73	\$752.49
Class Total		\$142.78	\$384.29

Key:

Fully funded by NDRT
Partly funded by NDRT

Notes:

¹ We ordered an additional four cameras, then received a refund on the original set. We had eight total cameras for a functional per unit price of \$12.50.

² Senior design funded four units, while NDRT funded two units.

³ These components were not purchased. They were taken from the Telemetry Senior Design SP20 project.

III. Design: Finalized Pin-Out Diagram

