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DRONERESPONDERS

SPRING 2020

PUBLIC SAFETY UAS SURVEY RESULTS

Presented by Christopher Todd CEM, FPEM and Chief Charles Werner (Ret.)



Created: Tuesday, May 26, 2020

Total Survey Responses: 520

Complete Survey Responses: 347

Responses This Segment: 289

SURVEY METHODOLOGY

The *AIRT-DRONERESPONDERS Spring 2020 Public Safety UAS Survey* represents a quantitative method, cross-sectional, self-selected, online questionnaire survey conducted by AIRT, Inc. between May 26 and June 15, 2020.

The survey was directly promoted to a highly-targeted, known, self-selecting group of public safety UAS professionals representing a wide cross-section of the public safety drone community. The margin of error for this survey is projected at +/- 5%.

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SECTION 5: Data Security and Legislative Outlook

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SECTION 1: CONTROL QUESTIONS



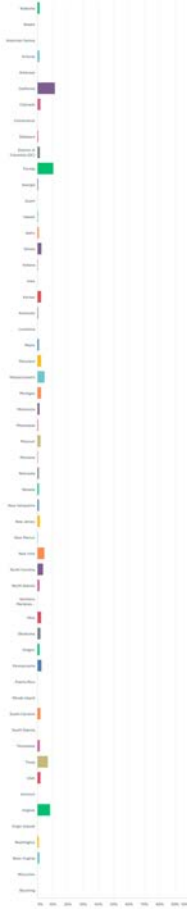
Q1: What country is your primary base of operations?

Answered: 289 Skipped: 0



Q2: In what state or U.S. territory are you based?

Answered: 289 Skipped: 0



Q2: In what state or U.S. territory are you based?

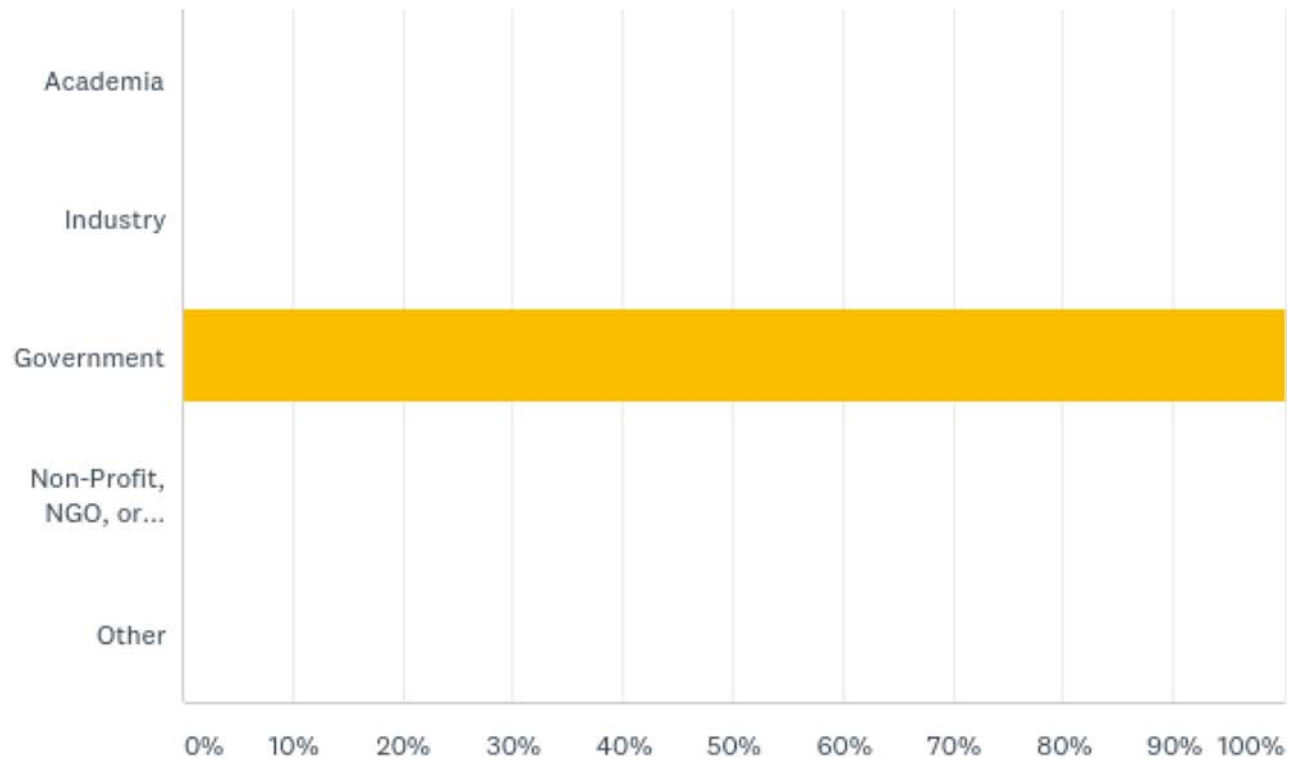
Answered: 289 Skipped: 0

ANSWER CHOICES	PERCENTAGE	RESPONSES
Alabama	1.38%	4
Alaska	0.00%	0
American Samoa	0.00%	0
Arizona	1.38%	4
Arkansas	0.00%	0
California	11.42%	33
Colorado	2.08%	6
Connecticut	0.00%	0
Delaware	0.69%	2
District of Columbia (DC)	1.73%	5
Florida	10.38%	30
Georgia	0.69%	2
Guam	0.00%	0
Hawaii	0.69%	2
Idaho	1.04%	3
Illinois	2.77%	8
Indiana	0.35%	1
Iowa	0.00%	0
Kansas	2.42%	7
Kentucky	0.69%	2
Louisiana	0.00%	0
Maine	1.04%	3
Maryland	2.42%	7
Massachusetts	4.84%	14
Michigan	2.42%	7
Minnesota	1.38%	4
Mississippi	0.69%	2
Missouri	2.08%	6
Montana	0.35%	1
Nebraska	1.04%	3
Nevada	1.04%	3
New Hampshire	1.73%	5
New Jersey	0.35%	1
New Mexico	4.50%	13
New York	3.81%	11
North Carolina	1.38%	4
North Dakota	0.00%	0
Northern Mariana Islands	0.00%	0
Ohio	2.42%	7
Oklahoma	2.08%	6
Oregon	1.38%	4
Pennsylvania	2.77%	8
Puerto Rico	0.00%	0
Rhode Island	0.00%	0
South Carolina	2.08%	6
South Dakota	0.00%	0
Tennessee	1.73%	5
Texas	6.92%	20
Utah	2.08%	6
Vermont	0.00%	0
Virginia	8.30%	24
Virgin Islands	0.00%	0
Washington	1.04%	3
West Virginia	1.38%	4
Wisconsin	0.00%	0
Wyoming	0.00%	0
TOTAL		289



Q3: What best describes the sector your organization operates in?

Answered: 289 Skipped: 0



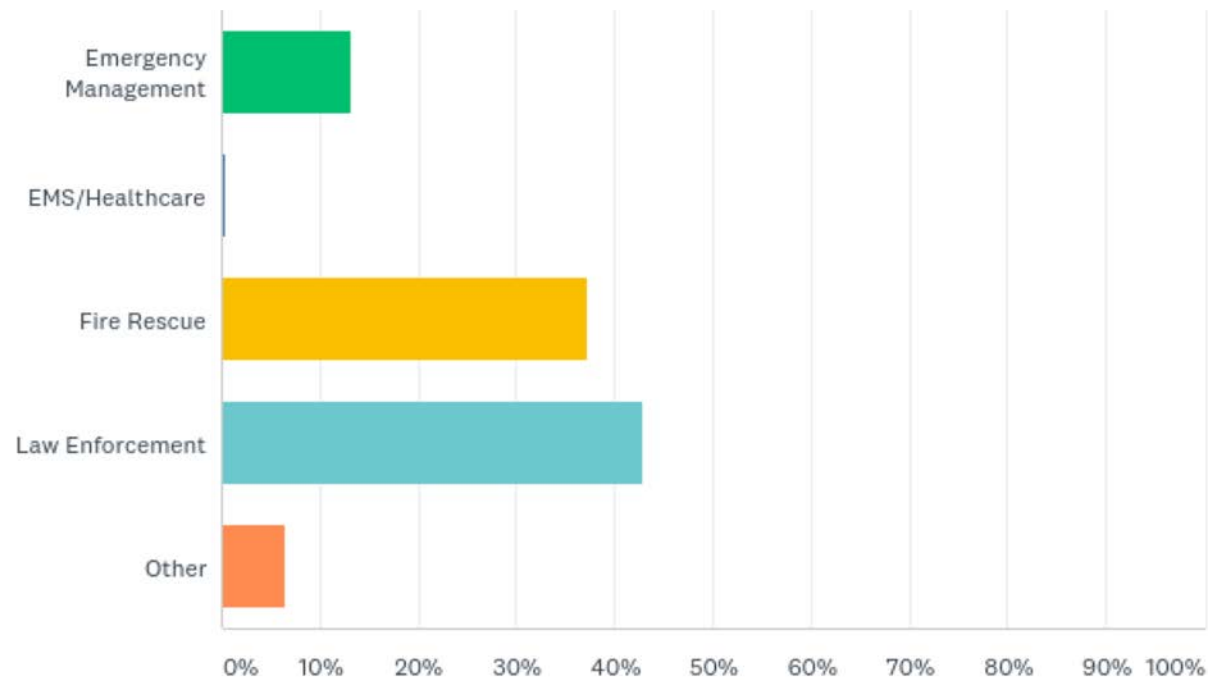
Q3: What best describes the sector your organization operates in?

Answered: 289 Skipped: 0

ANSWER CHOICES	RESPONSES	
Academia	0.00%	0
Industry	0.00%	0
Government	100.00%	289
Non-Profit, NGO, or Volunteer	0.00%	0
Other	0.00%	0
TOTAL		289

Q4: What best describes your type of public safety agency or organization?

Answered: 282 Skipped: 7



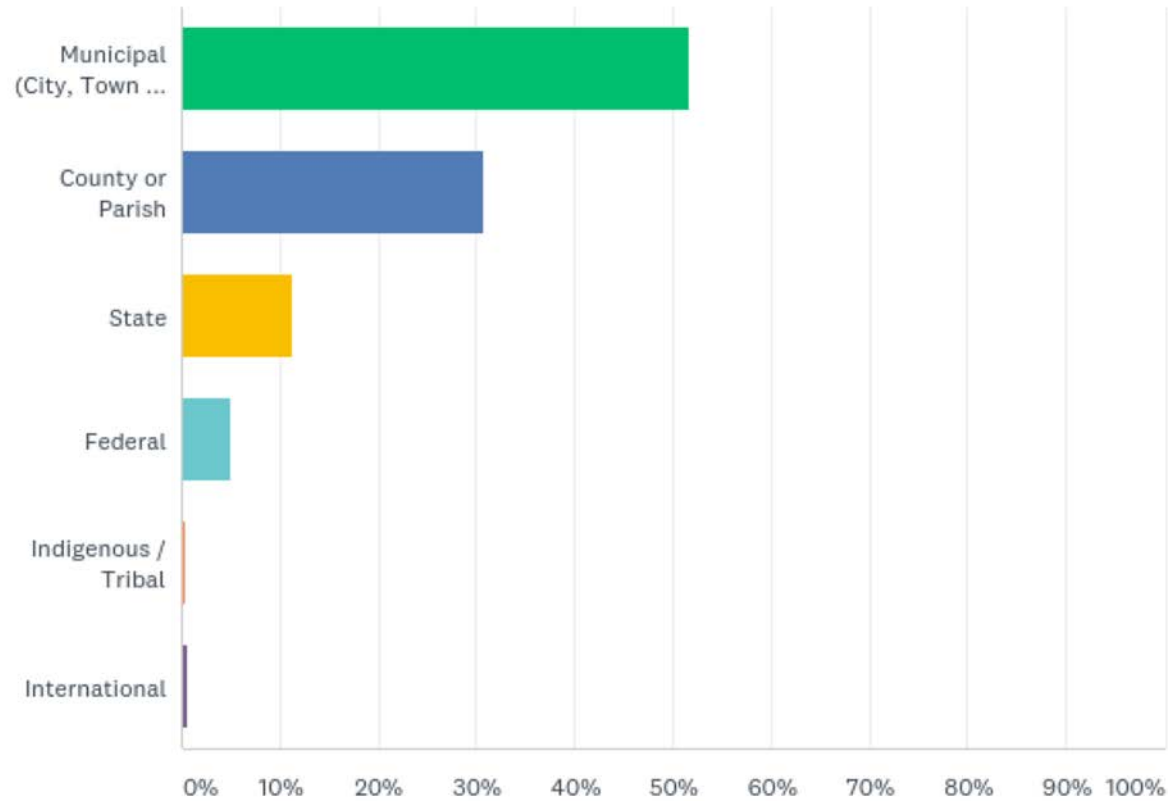
Q4: What best describes your type of public safety agency or organization?

Answered: 282 Skipped: 7

ANSWER CHOICES	RESPONSES	
Emergency Management	13.12%	37
EMS/Healthcare	0.35%	1
Fire Rescue	37.23%	105
Law Enforcement	42.91%	121
Other	6.38%	18
TOTAL		282

Q7: What type of jurisdiction best describes your agency or organization?

Answered: 282 Skipped: 7



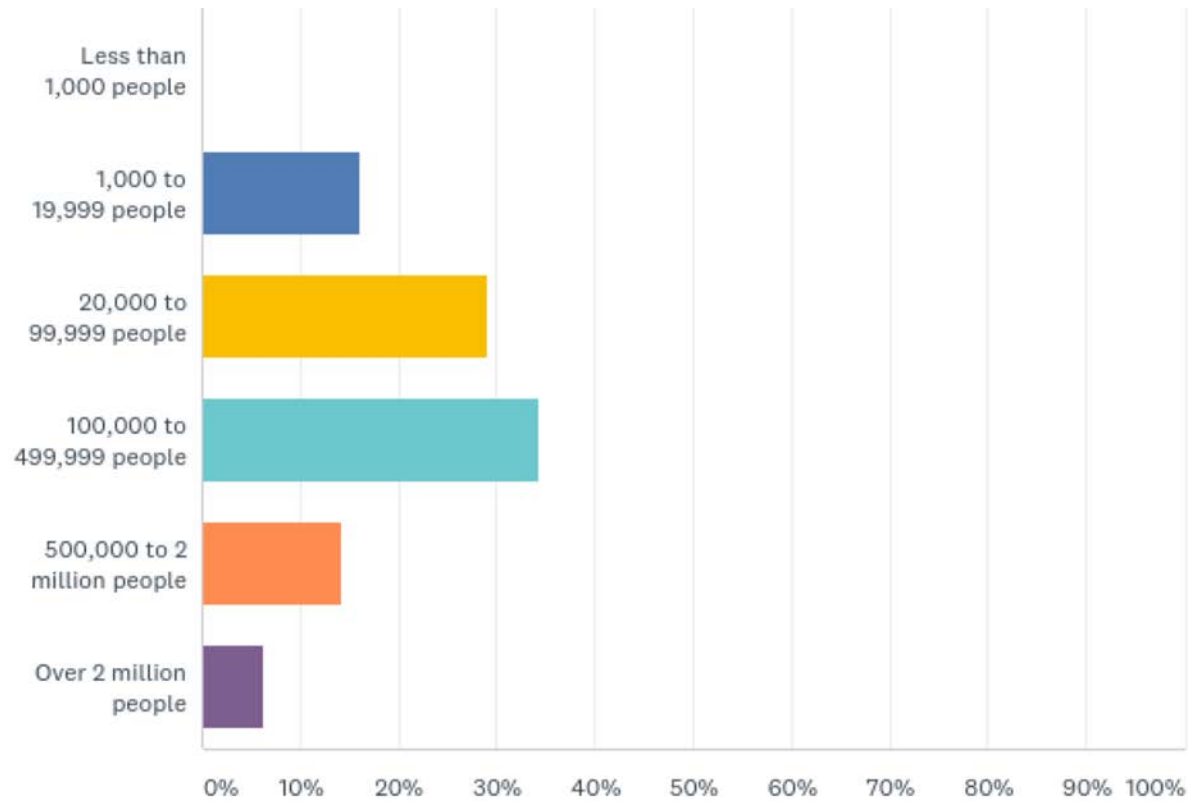
Q7: What type of jurisdiction best describes your agency or organization?

Answered: 282 Skipped: 7

ANSWER CHOICES	RESPONSES	
Municipal (City, Town or Village)	51.77%	146
County or Parish	30.85%	87
State	11.35%	32
Federal	4.96%	14
Indigenous / Tribal	0.35%	1
International	0.71%	2
TOTAL		282

Q8: What is the population of your jurisdiction?

Answered: 224 Skipped: 65



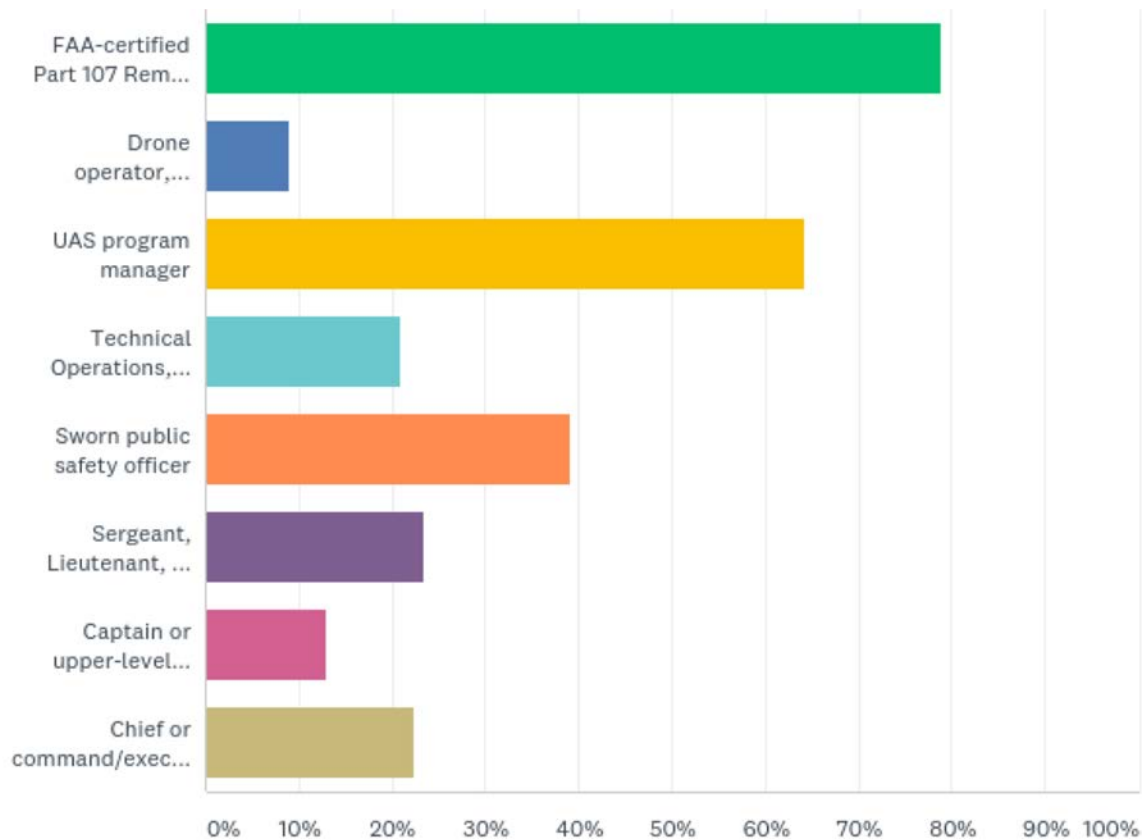
Q8: What is the population of your jurisdiction?

Answered: 224 Skipped: 65

ANSWER CHOICES	RESPONSES	
Less than 1,000 people	0.00%	0
1,000 to 19,999 people	16.07%	36
20,000 to 99,999 people	29.02%	65
100,000 to 499,999 people	34.38%	77
500,000 to 2 million people	14.29%	32
Over 2 million people	6.25%	14
TOTAL		224

Q10: Which of the following attributes describe your role within your public safety UAS program? (Check all that apply)

Answered: 269 Skipped: 20



Q10: Which of the following attributes describe your role within your public safety UAS program? (Check all that apply)

Answered: 269 Skipped: 20

ANSWER CHOICES	RESPONSES	
FAA-certified Part 107 Remote Pilot	78.81%	212
Drone operator, non-FAA Part 107 certified.	8.92%	24
UAS program manager	64.31%	173
Technical Operations, forensic investigation, or CSI unit	20.82%	56
Sworn public safety officer	39.03%	105
Sergeant, Lieutenant, or mid-level leadership	23.42%	63
Captain or upper-level leadership	13.01%	35
Chief or command/executive-level leadership	22.30%	60
Total Respondents: 269		



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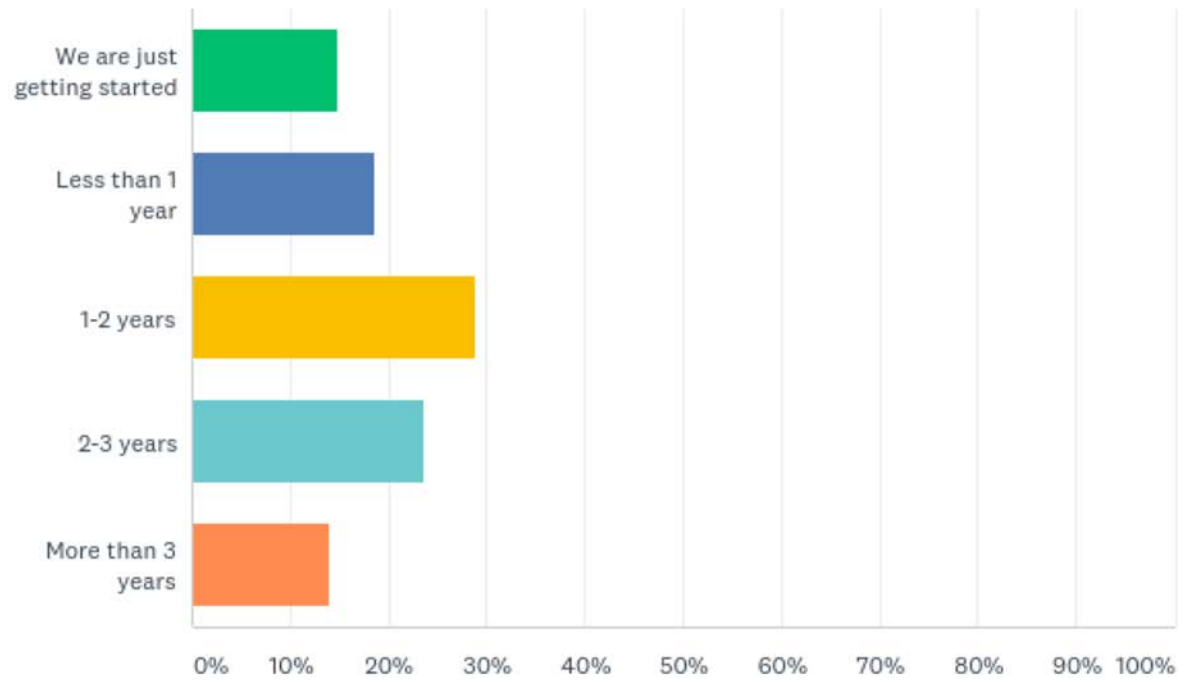
SECTION 2: UAS PROGRAM COMPOSITION



Fall 2019

How long has your public safety UAS program been operational?

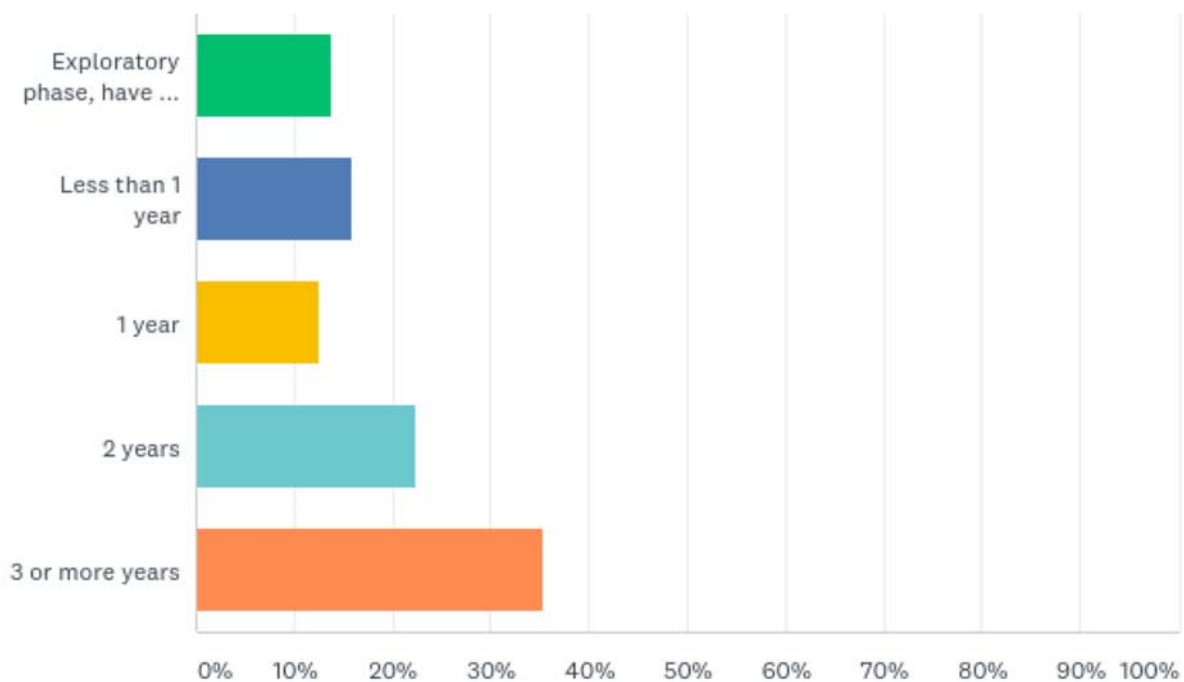
Answered: 215 Skipped: 4



Spring 2020

How long has your public safety UAS program been operational?

Answered: 269 Skipped: 20



Fall 2019 vs Spring 2020

How long has your public safety UAS program been operational?

Answered: 215 Skipped: 4

ANSWER CHOICES	RESPONSES	
We are just getting started	14.88%	32
Less than 1 year	18.60%	40
1-2 years	28.84%	62
2-3 years	23.72%	51
More than 3 years	13.95%	30
TOTAL		215

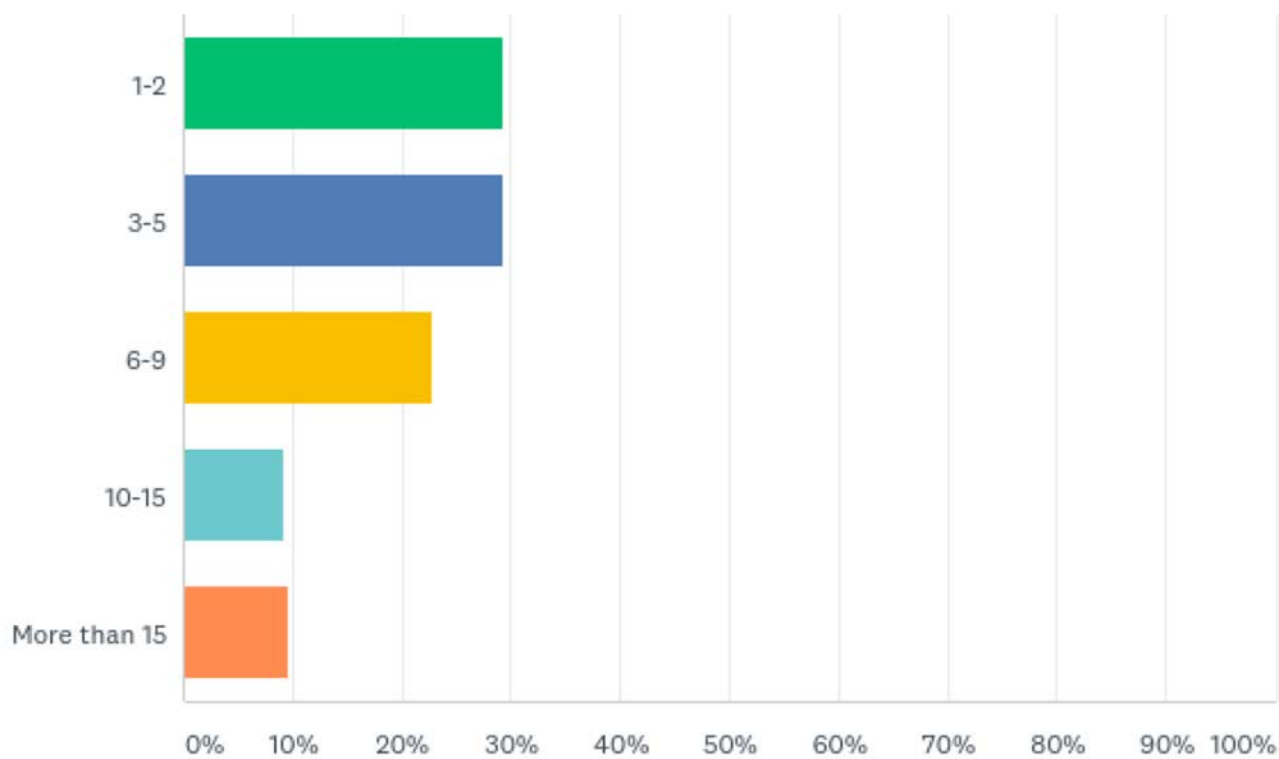
Answered: 269 Skipped: 20

ANSWER CHOICES	RESPONSES	
Exploratory phase, have not officially launched	13.75%	37
Less than 1 year	15.99%	43
1 year	12.64%	34
2 years	22.30%	60
3 or more years	35.32%	95
TOTAL		269

FALL 2019

How many drone operators and/or remote pilots currently participate in your public safety UAS program?

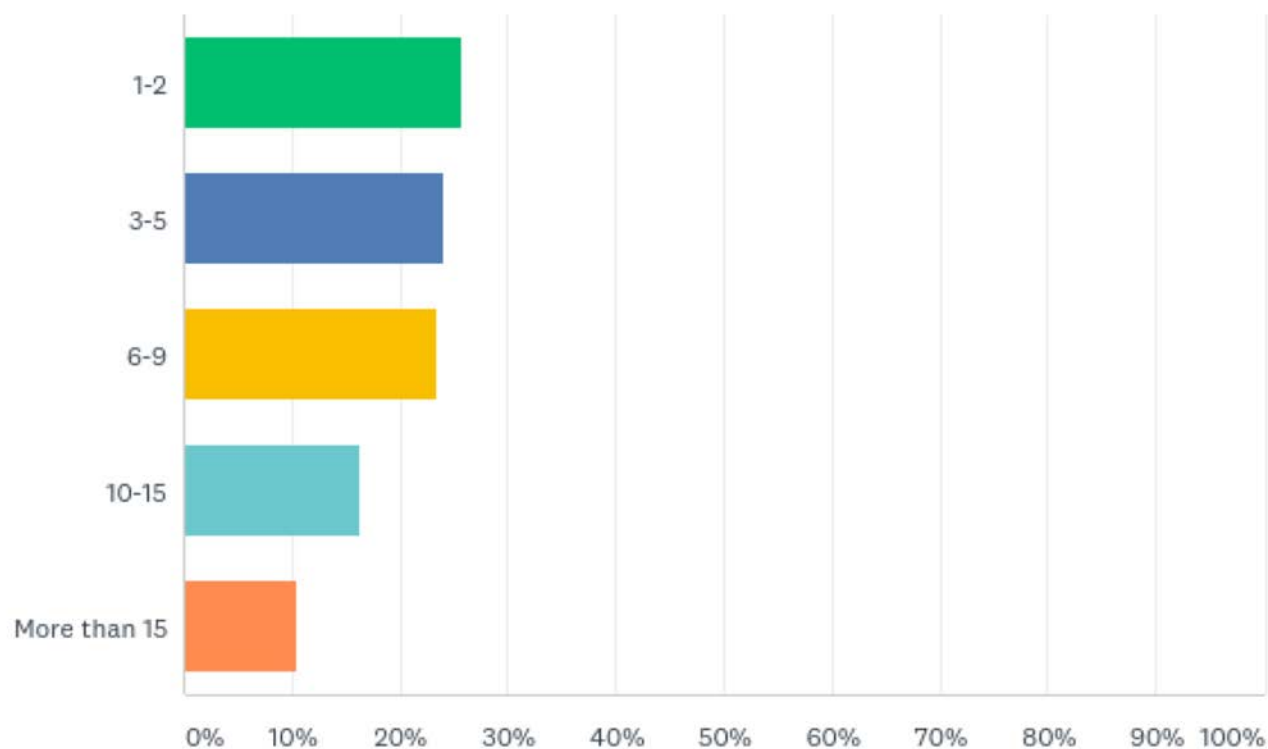
Answered: 219 Skipped: 0



SPRING 2020

How many remote pilots / drone operators currently participate in your public safety UAS program?

Answered: 257 Skipped: 32



FALL 2019 vs SPRING 2020

How many remote pilots / drone operators currently participate in your public safety UAS program?

Answered: 219 Skipped: 0

ANSWER CHOICES	RESPONSES	
1-2	29.22%	64
3-5	29.22%	64
6-9	22.83%	50
10-15	9.13%	20
More than 15	9.59%	21
TOTAL		219

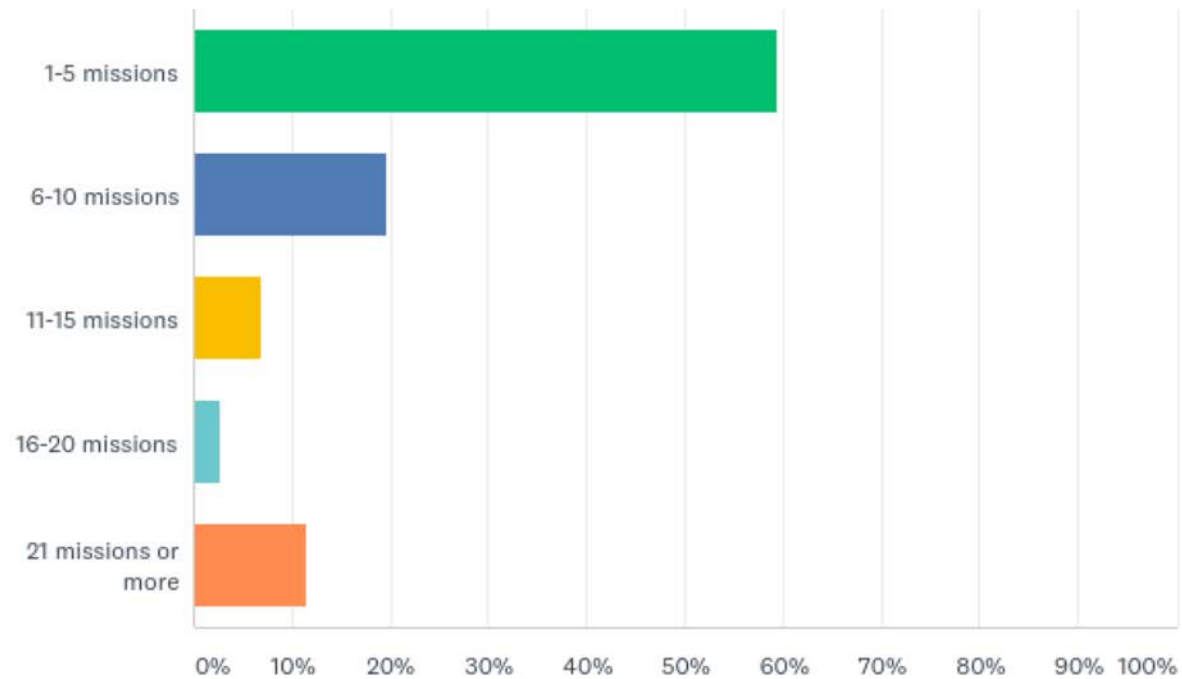
Answered: 257 Skipped: 32

ANSWER CHOICES	RESPONSES	
1-2	25.68%	66
3-5	24.12%	62
6-9	23.35%	60
10-15	16.34%	42
More than 15	10.51%	27
TOTAL		257

FALL 2019

Including training, how many public safety UAS missions does your program typically fly on average each calendar month?

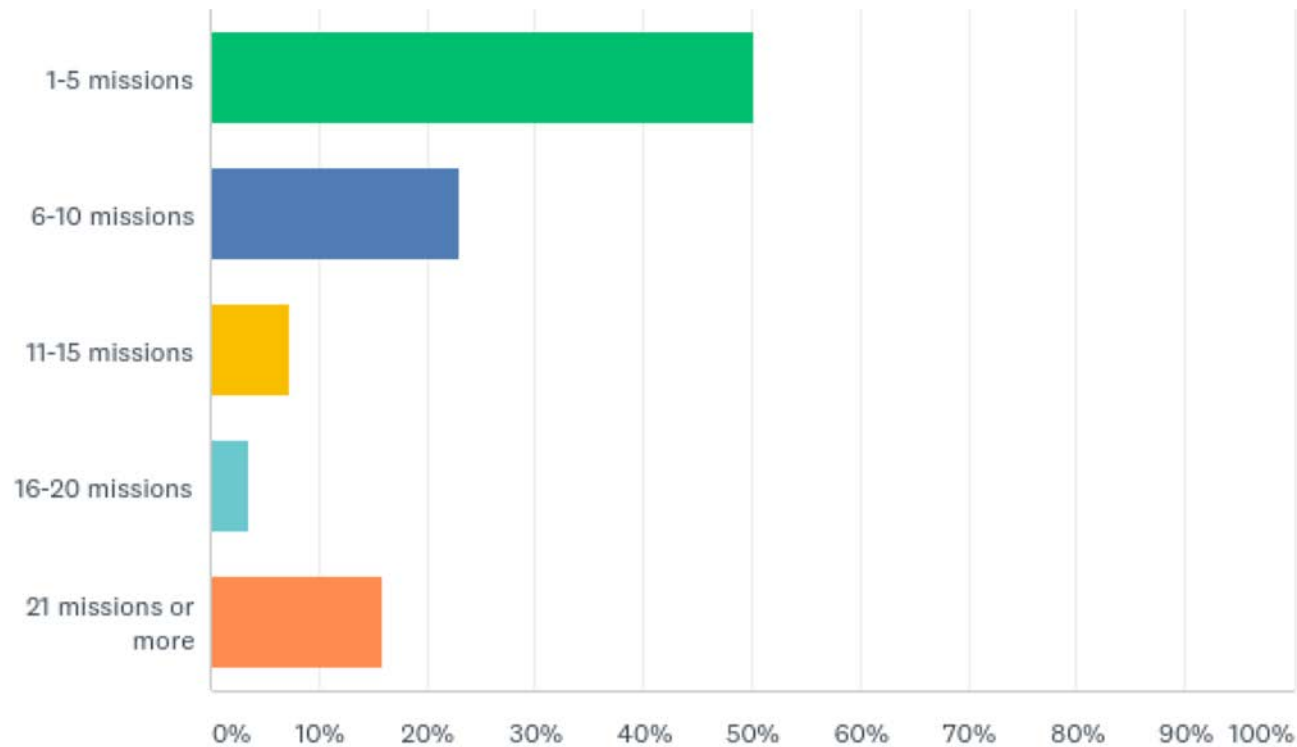
Answered: 219 Skipped: 0



SPRING 2020

Including training, how many public safety-related UAS missions does your program typically fly each calendar month?

Answered: 257 Skipped: 32



FALL 2019 vs SPRING 2020

Including training, how many public safety-related UAS missions does your program typically fly each calendar month?

Answered: 219 Skipped: 0

ANSWER CHOICES	RESPONSES	
1-5 missions	59.36%	130
6-10 missions	19.63%	43
11-15 missions	6.85%	15
16-20 missions	2.74%	6
21 missions or more	11.42%	25
TOTAL		219

Answered: 257 Skipped: 32

ANSWER CHOICES	RESPONSES	
1-5 missions	50.19%	129
6-10 missions	22.96%	59
11-15 missions	7.39%	19
16-20 missions	3.50%	9
21 missions or more	15.95%	41
TOTAL		257





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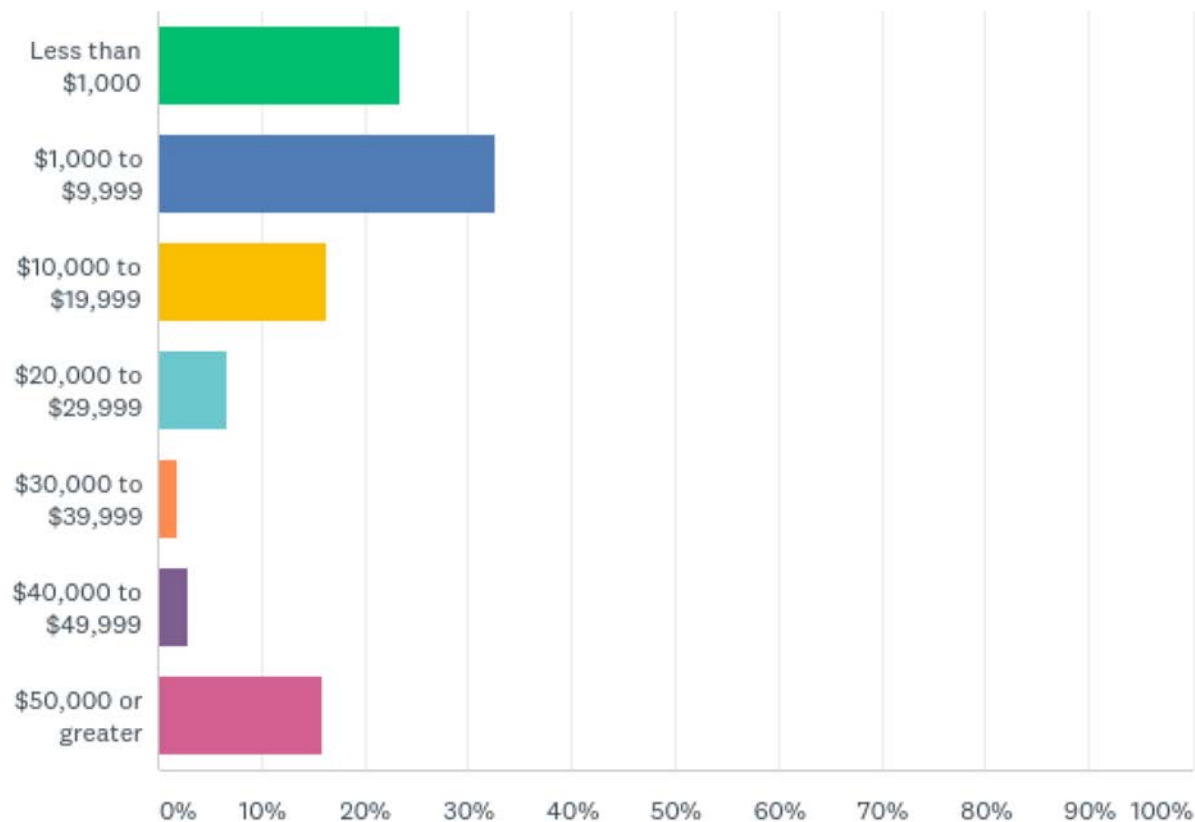
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SECTION 3: BUDGETING AND FINANCE



Q11: What is the projected FY 2020 annual budget (U.S. Dollar) for your public safety UAS program?

Answered: 269 Skipped: 20



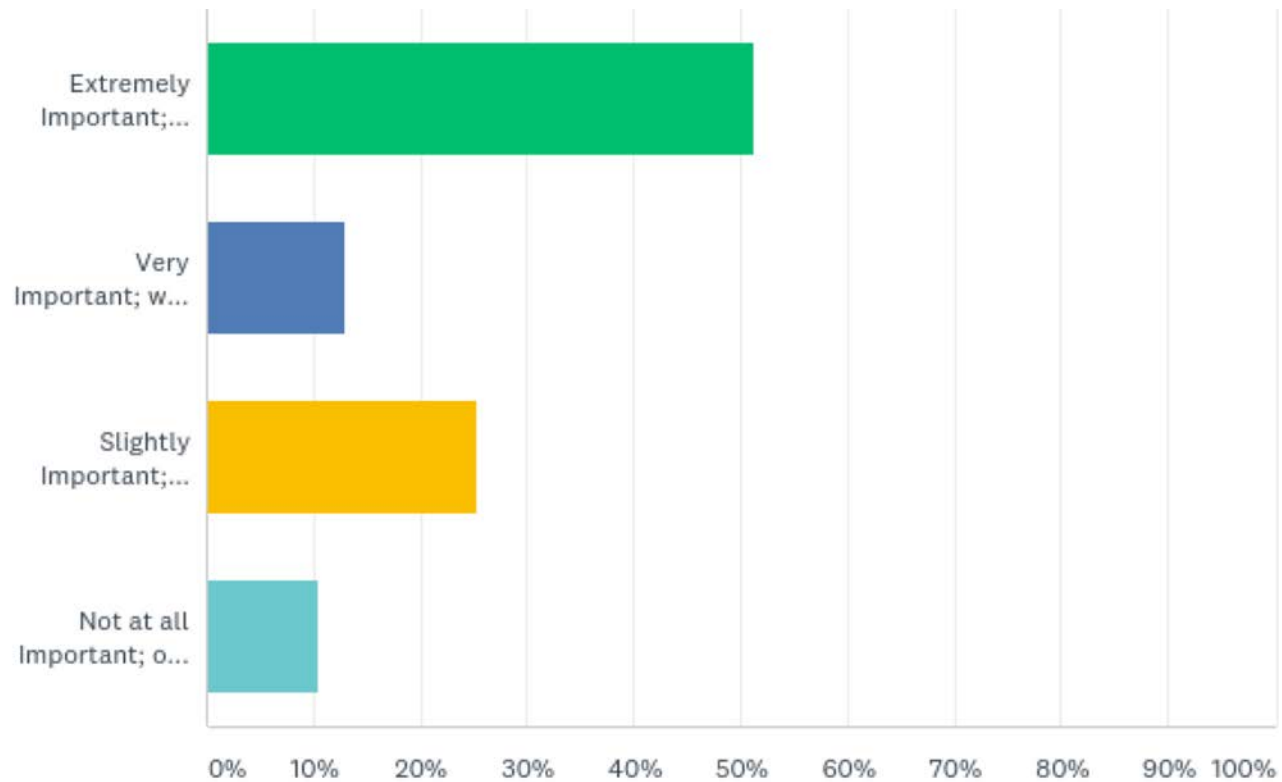
Q11: What is the projected FY 2020 annual budget (U.S. Dollar) for your public safety UAS program?

Answered: 269 Skipped: 20

ANSWER CHOICES	RESPONSES	
Less than \$1,000	23.42%	63
\$1,000 to \$9,999	32.71%	88
\$10,000 to \$19,999	16.36%	44
\$20,000 to \$29,999	6.69%	18
\$30,000 to \$39,999	1.86%	5
\$40,000 to \$49,999	2.97%	8
\$50,000 or greater	15.99%	43
TOTAL		269

Q12: Which of the following best describes the importance of grants and/or donations for funding support of your public safety UAS program?

Answered: 269 Skipped: 20



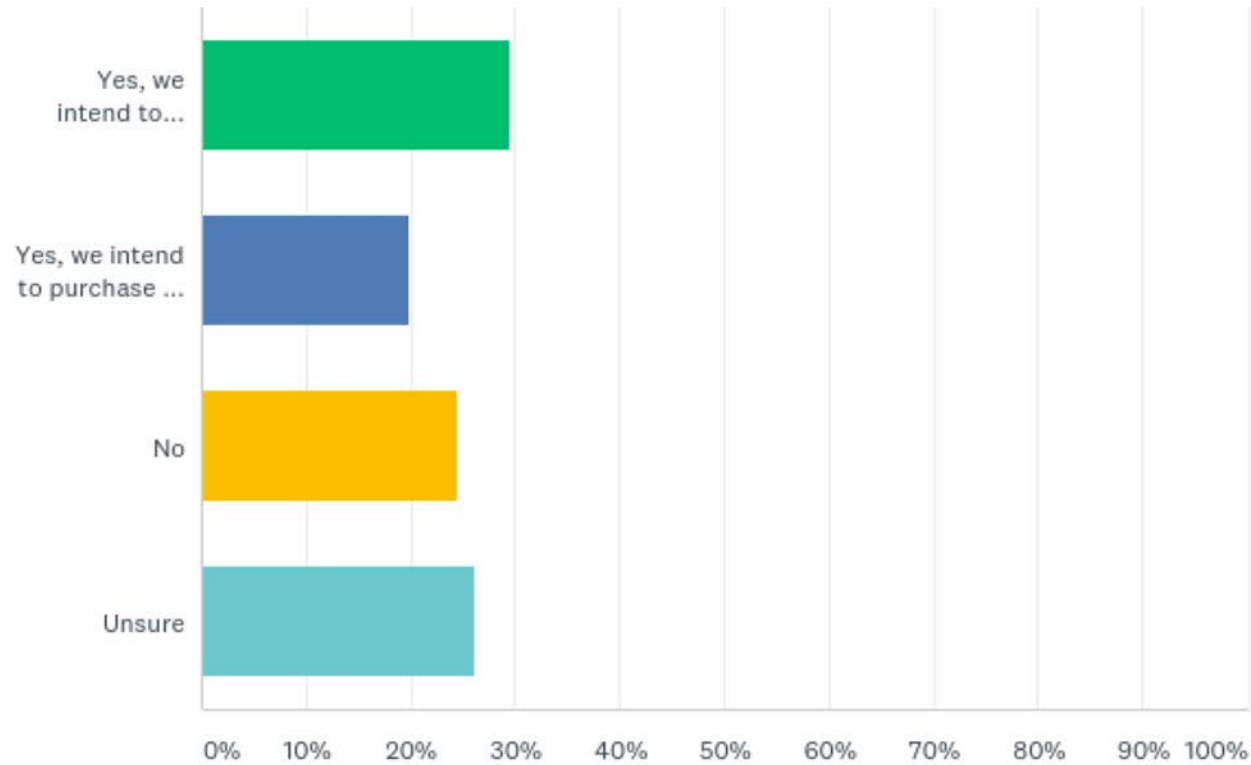
Q12: Which of the following best describes the importance of grants and/or donations for funding support of your public safety UAS program?

Answered: 269 Skipped: 20

ANSWER CHOICES	RESPONSES
Extremely Important; grant funding and/or donations are essential for our UAS program to exist.	51.30% 138
Very Important; we depend on grants and/or donations for a sizable portion of our program's funding.	13.01% 35
Slightly Important; grants and/or donations are helpful for our UAS program, but we do not depend on them.	25.28% 68
Not at all Important; our UAS program does not require support from grants and/or donations.	10.41% 28
TOTAL	269

Q16: Does your organization intend to purchase any new UAS between now and December 31, 2020?

Answered: 257 Skipped: 32



Q16: Does your organization intend to purchase any new UAS between now and December 31, 2020?

Answered: 257 Skipped: 32

ANSWER CHOICES	RESPONSES
Yes, we intend to purchase two or more new UAS before the end of the calendar year.	29.57% 76
Yes, we intend to purchase one new UAS before the end of the calendar year.	19.84% 51
No	24.51% 63
Unsure	26.07% 67
TOTAL	257



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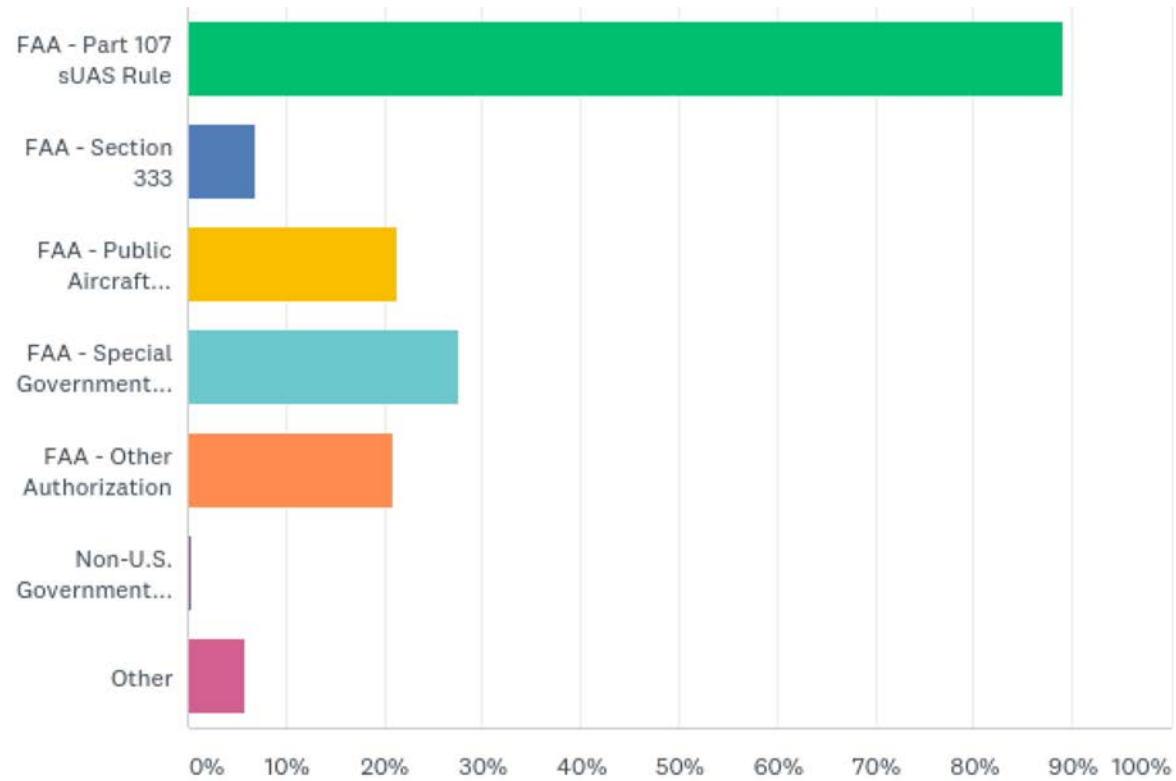
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SECTION 4: FLIGHT OPERATIONS



Q15: Under what authority does your UAS program operate? (Check all that apply)

Answered: 257 Skipped: 32



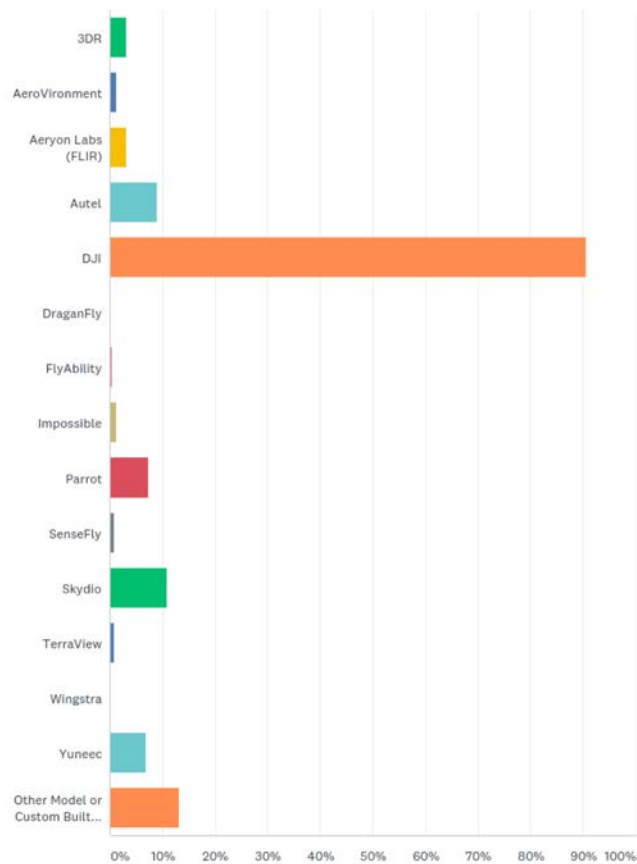
Q15: Under what authority does your UAS program operate? (Check all that apply)

Answered: 257 Skipped: 32

ANSWER CHOICES	RESPONSES	
FAA - Part 107 sUAS Rule	89.11%	229
FAA - Section 333	7.00%	18
FAA - Public Aircraft Operation (PAO)	21.40%	55
FAA - Special Government Interest (SGI)	27.63%	71
FAA - Other Authorization	21.01%	54
Non-U.S. Government Authority (non-FAA)	0.39%	1
Other	5.84%	15
Total Respondents: 257		

Q17: Which of the following brand(s) of UAS does your public safety agency or organization currently operate? (Check all that apply)

Answered: 257 Skipped: 32



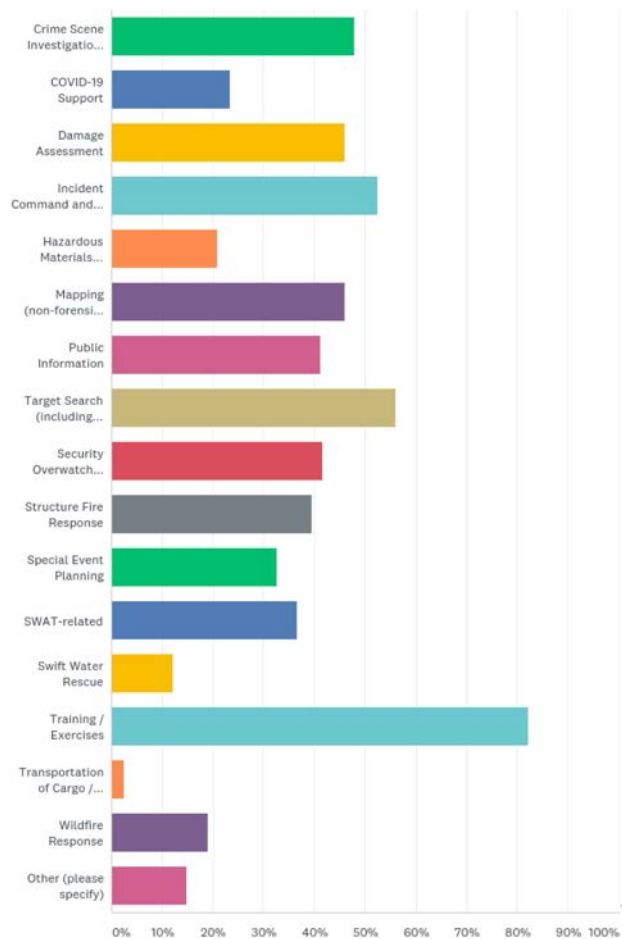
Q17: Which of the following brand(s) of UAS does your public safety agency or organization currently operate? (Check all that apply)

Answered: 257 Skipped: 32

ANSWER CHOICES	RESPONSES	
3DR	3.11%	8
AeroVironment	1.17%	3
Aeryon Labs (FLIR)	3.11%	8
Autel	8.95%	23
DJI	90.66%	233
DraganFly	0.00%	0
FlyAbility	0.39%	1
Impossible	1.17%	3
Parrot	7.39%	19
SenseFly	0.78%	2
Skydio	10.89%	28
TerraView	0.78%	2
Wingstra	0.00%	0
Yuneec	7.00%	18
Other Model or Custom Built (please specify)	13.23%	34
Total Respondents: 257		

Q18: Which of the following types of public safety UAS missions has your organization flown to date in 2020?

Answered: 248 Skipped: 41



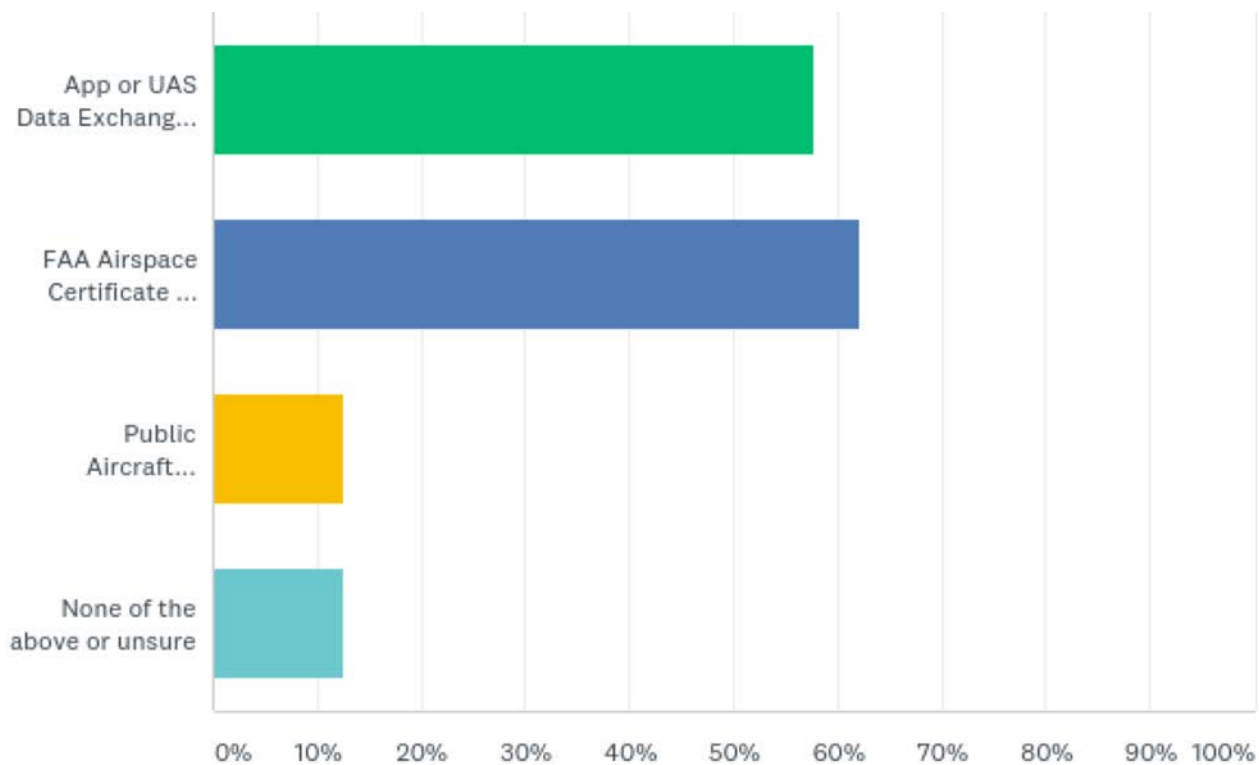
Q18: Which of the following types of public safety UAS missions has your organization flown to date in 2020?

Answered: 248 Skipped: 41

ANSWER CHOICES	RESPONSES	
Crime Scene Investigation / Forensic Analysis	47.98%	119
COVID-19 Support	23.39%	58
Damage Assessment	45.97%	114
Incident Command and Control (Live Streaming)	52.42%	130
Hazardous Materials (HAZMAT) Response	20.97%	52
Mapping (non-forensic related)	45.97%	114
Public Information	41.13%	102
Target Search (including Search and Rescue)	56.05%	139
Security Overwatch (Surveillance)	41.53%	103
Structure Fire Response	39.52%	98
Special Event Planning	32.66%	81
SWAT-related	36.69%	91
Swift Water Rescue	12.10%	30
Training / Exercises	82.26%	204
Transportation of Cargo / Equipment	2.42%	6
Wildfire Response	18.95%	47
Other (please specify)	14.92%	37
Total Respondents: 248		

Q19: How does your agency or organization obtain authorization to operate UAS in controlled (U.S.) airspace? (Check all that apply)

Answered: 248 Skipped: 41



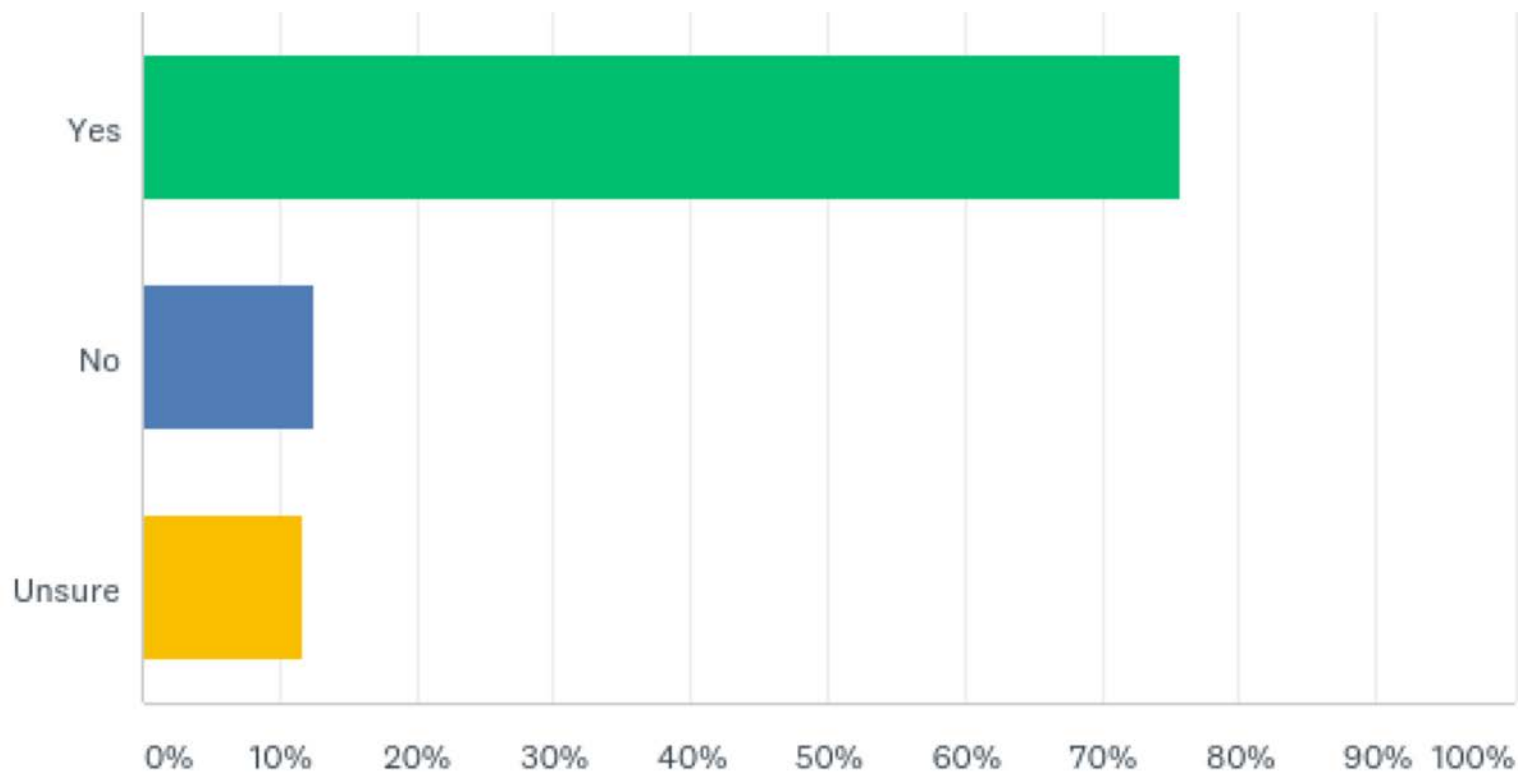
Q19: How does your agency or organization obtain authorization to operate UAS in controlled (U.S.) airspace? (Check all that apply)

Answered: 248 Skipped: 41

ANSWER CHOICES	RESPONSES
App or UAS Data Exchange offering Low Altitude Authorization and Notification Capability (LAANC)	57.66% 143
FAA Airspace Certificate of Waiver or Authorization (COA)	62.10% 154
Public Aircraft Operations (PAO)	12.50% 31
None of the above or unsure	12.50% 31
Total Respondents: 248	

Q20: Does your organization desire to conduct Beyond Visual Line of Sight (BVLOS) public safety drone operations?

Answered: 248 Skipped: 41



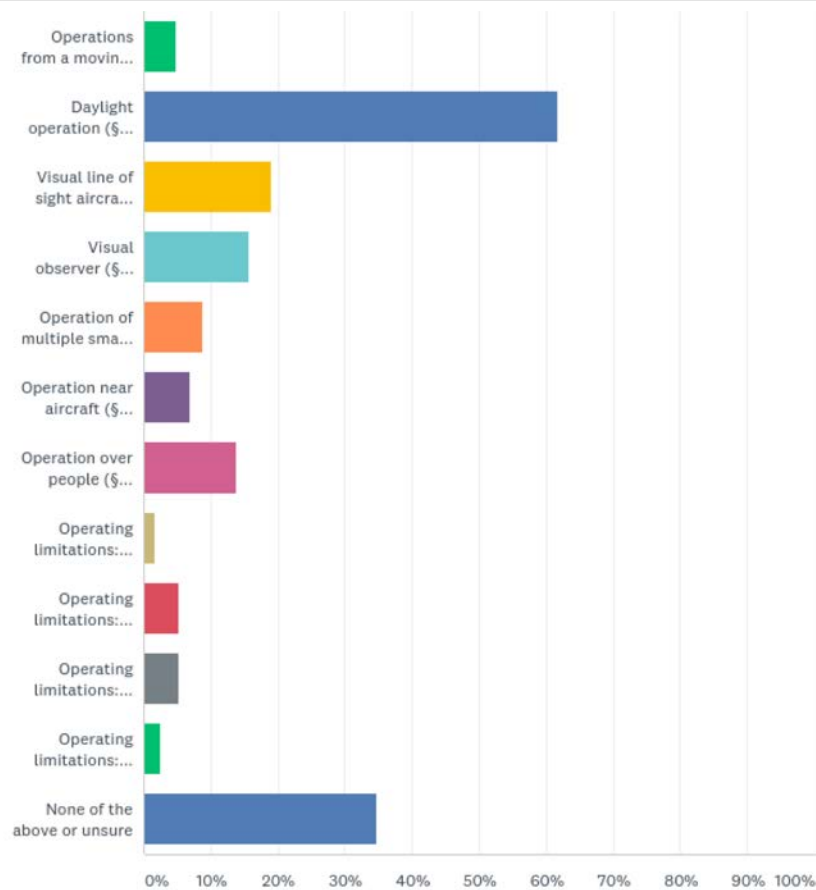
Q20: Does your organization desire to conduct Beyond Visual Line of Sight (BVLOS) public safety drone operations?

Answered: 248 Skipped: 41

ANSWER CHOICES	RESPONSES	
Yes	75.81%	188
No	12.50%	31
Unsure	11.69%	29
TOTAL		248

Q21: Which of the following FAA operational waivers does your agency or organization currently possess? (Check all that apply)

Answered: 248 Skipped: 41



Q21: Which of the following FAA operational waivers does your agency or organization currently possess? (Check all that apply)

Answered: 248 Skipped: 41

ANSWER CHOICES	RESPONSES	
Operations from a moving vehicle or aircraft (§ 107.25)	4.84%	12
Daylight operation (§ 107.29)	61.69%	153
Visual line of sight aircraft operation (§ 107)	18.95%	47
Visual observer (§ 107.33)	15.73%	39
Operation of multiple small unmanned aircraft (§ 107.35)	8.87%	22
Operation near aircraft (§ 107.37)	6.85%	17
Operation over people (§ 107.39)	13.71%	34
Operating limitations: ground speed faster than 87 knots/100 mph (§ 107.51(a))	1.61%	4
Operating limitations: altitude higher than 400 feet (§ 107.51(b))	5.24%	13
Operating limitations: minimum/reduced visibility (§ 107.51(c))	5.24%	13
Operating limitations: minimum distance from clouds (§ 107.51(d))	2.42%	6
None of the above or unsure	34.68%	86
Total Respondents: 248		



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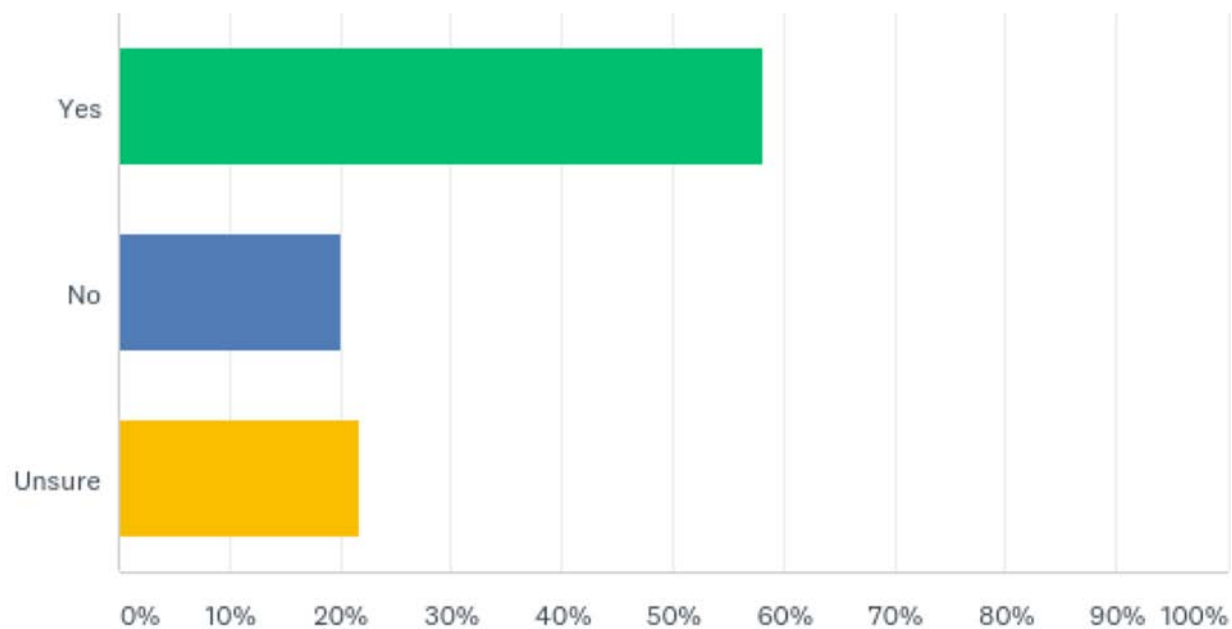
SECTION 5: DATA SECURITY AND LEGISLATIVE OUTLOOK



FALL 2019

Is the FAA responsive to the needs of public safety UAS programs?

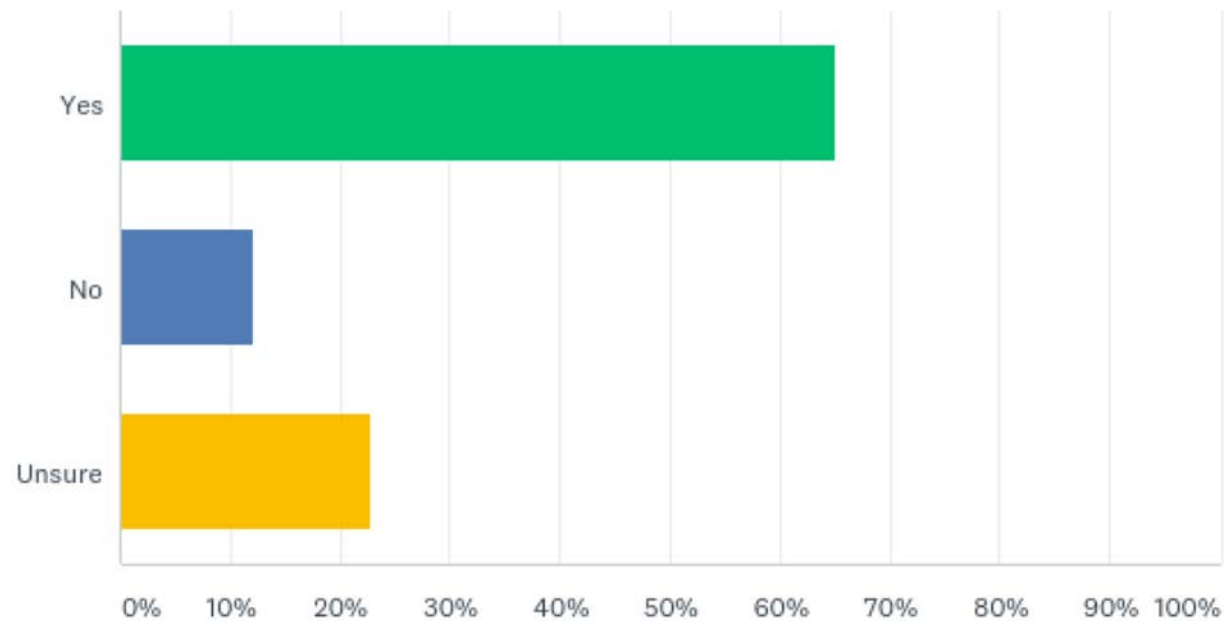
Answered: 184 Skipped: 35



SPRING 2020

Is the FAA responsive to the needs of public safety UAS programs?

Answered: 246 Skipped: 43



FALL 2019 vs SPRING 2020

Is the FAA responsive to the needs of public safety UAS programs?

Answered: 184 Skipped: 35

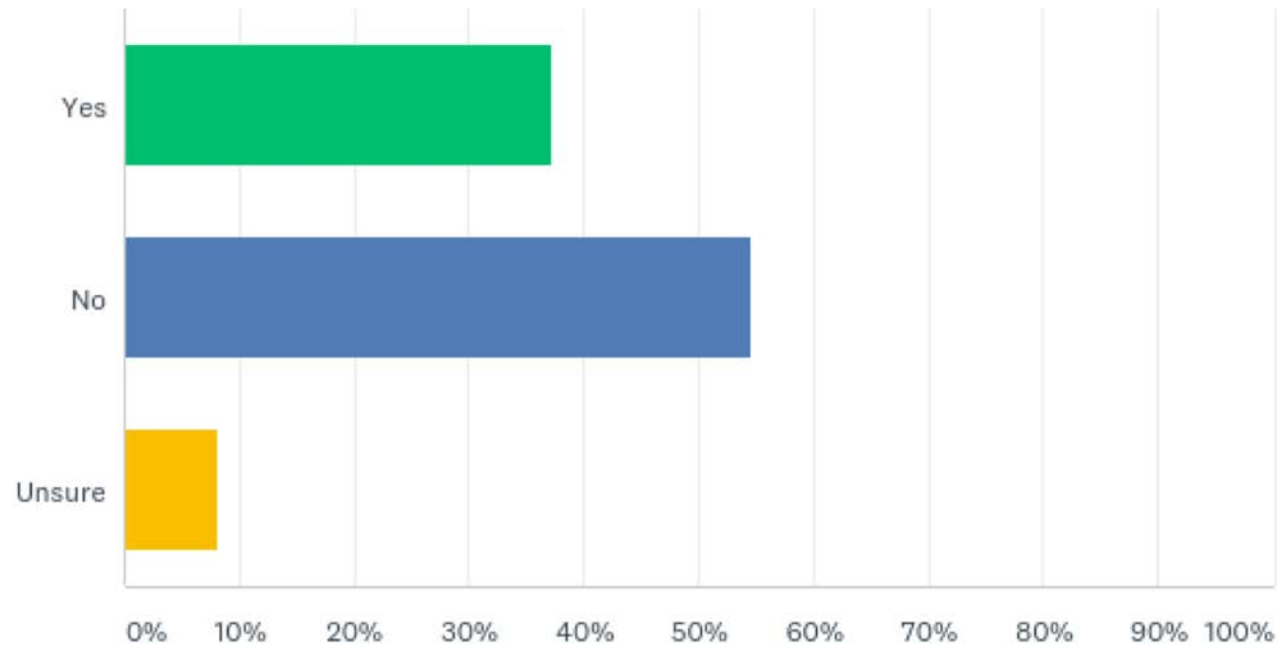
ANSWER CHOICES	RESPONSES	
Yes	58.15%	107
No	20.11%	37
Unsure	21.74%	40
TOTAL		184

Answered: 246 Skipped: 43

ANSWER CHOICES	RESPONSES	
Yes	65.04%	160
No	12.20%	30
Unsure	22.76%	56
TOTAL		246

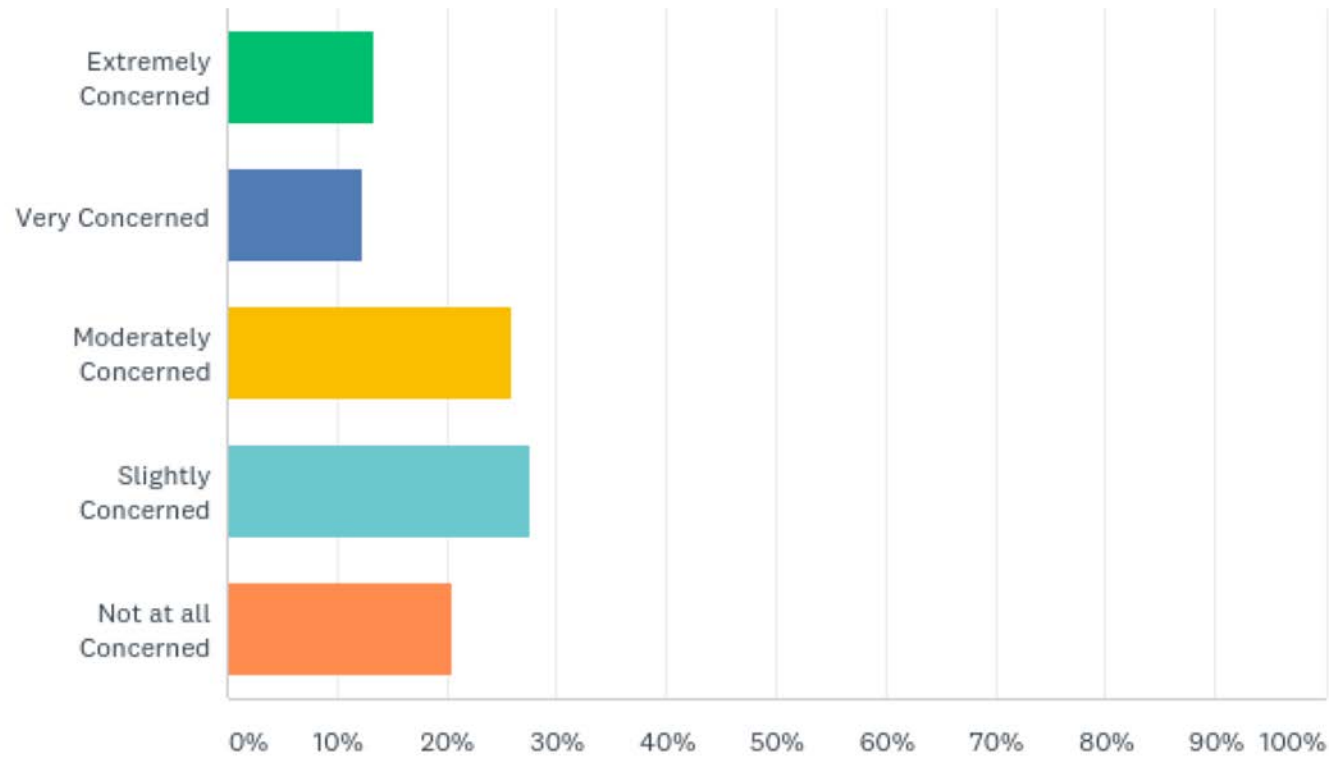
FALL 2019: Are you concerned about the security of your drone data and any potential vulnerabilities within the UAS or related software that might allow a foreign company or government to receive sensitive information surrounding your domestic flight operations?

Answered: 185 Skipped: 34



SPRING 2020 - How concerned are you about the security of your drone data and any potential security vulnerabilities within the UAS or related software that might allow a foreign company or government to receive sensitive information surrounding your domestic flight operations?

Answered: 282 Skipped: 7



FALL 2019 vs SPRING 2020

Are you (How) concerned are you about the security of your drone data and any potential security vulnerabilities within the UAS or related software that might allow a foreign company or government to receive sensitive information surrounding your domestic flight operations?

Answered: 185 Skipped: 34

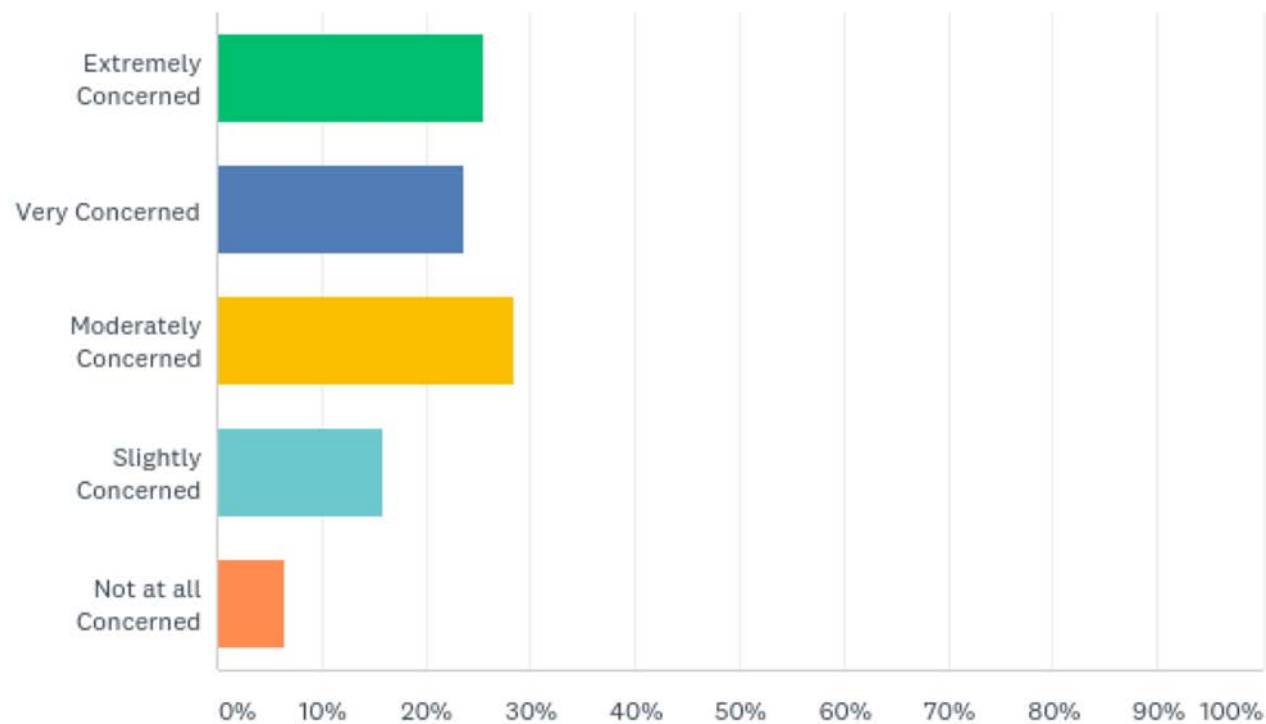
ANSWER CHOICES	RESPONSES	
Yes	37.30%	69
No	54.59%	101
Unsure	8.11%	15
TOTAL		185

Answered: 282 Skipped: 7

ANSWER CHOICES	RESPONSES	
Extremely Concerned	13.48%	38
Very Concerned	12.41%	35
Moderately Concerned	25.89%	73
Slightly Concerned	27.66%	78
Not at all Concerned	20.57%	58
TOTAL		282

Q26: How concerned are you about the potential impact that federal congressional legislation or executive action could have on your public safety drone operation?

Answered: 246 Skipped: 43



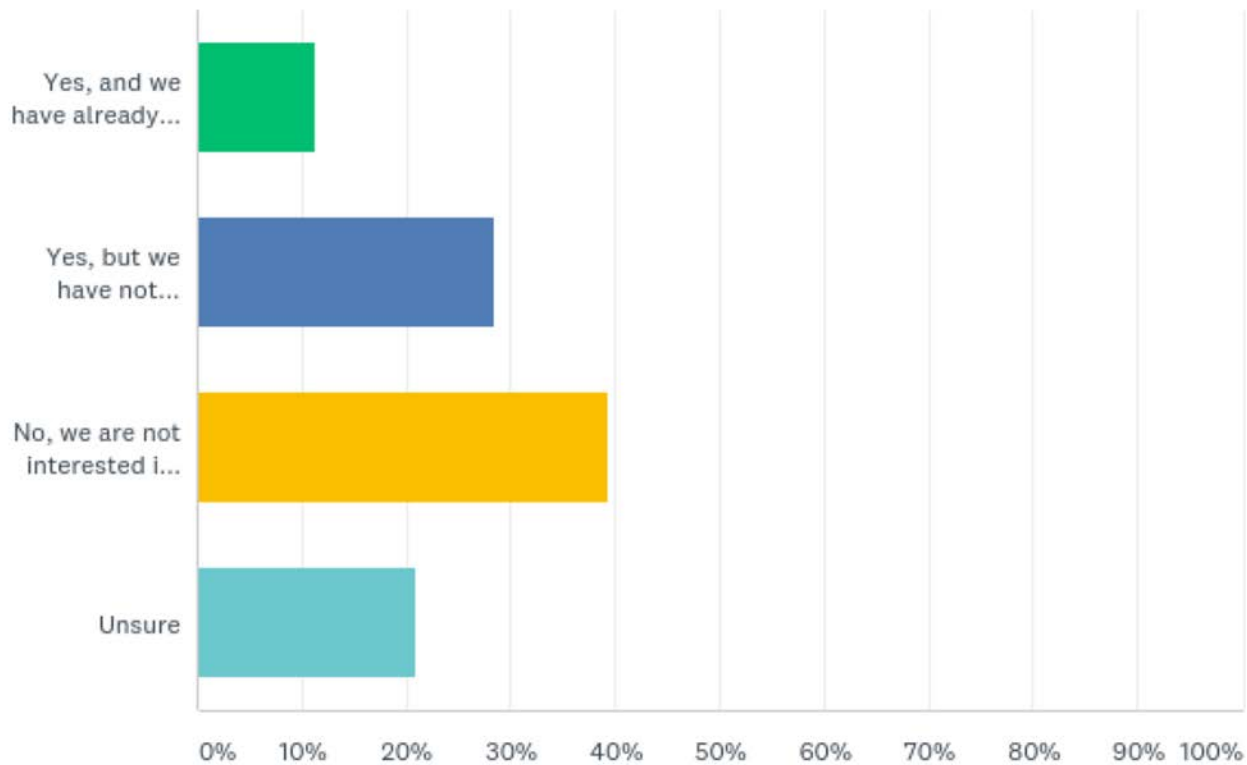
Q26: How concerned are you about the potential impact that federal congressional legislation or executive action could have on your public safety drone operation?

Answered: 246 Skipped: 43

ANSWER CHOICES	RESPONSES	
Extremely Concerned	25.61%	63
Very Concerned	23.58%	58
Moderately Concerned	28.46%	70
Slightly Concerned	15.85%	39
Not at all Concerned	6.50%	16
TOTAL		246

Q5: Is your organization interested in deploying counter-drone (C-UAS) technology for public safety purposes?

Answered: 282 Skipped: 7



Q5: Is your organization interested in deploying counter-drone (C-UAS) technology for public safety purposes?

Answered: 282 Skipped: 7

ANSWER CHOICES	RESPONSES
Yes, and we have already deployed C-UAS technology.	11.35% 32
Yes, but we have not deployed C-UAS technology to date.	28.37% 80
No, we are not interested in deploying C-UAS technology at this time.	39.36% 111
Unsure	20.92% 59
TOTAL	282



AIRT



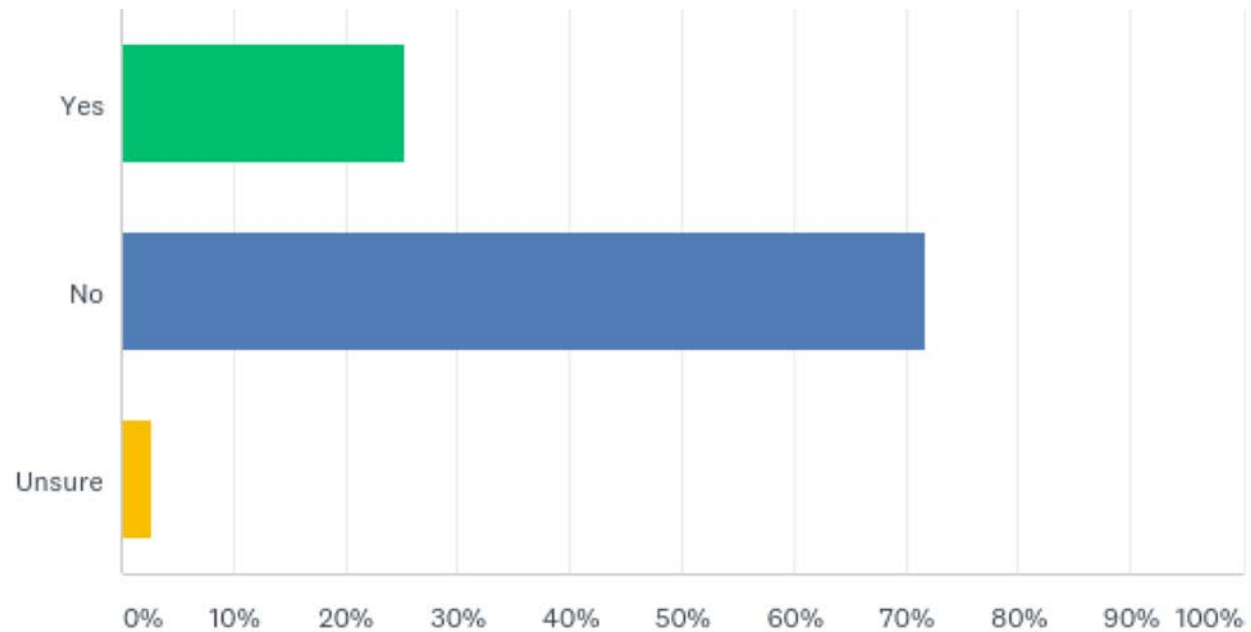
DRONERESPONDERS

SECTION 6: COVID-19 PANDEMIC



Q22: Has your organization flown a public safety drone missions in direct response to the COVID-19 pandemic?

Answered: 248 Skipped: 41



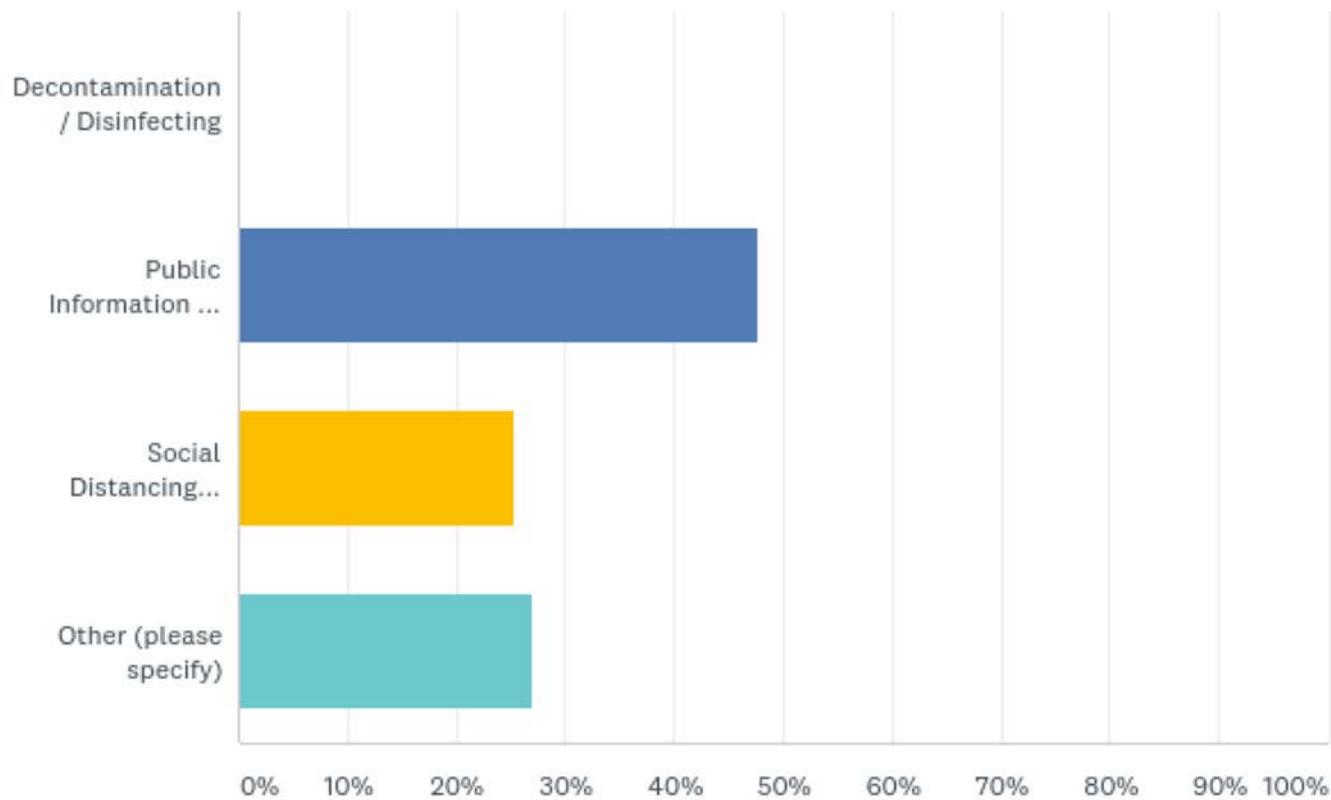
Q22: Has your organization flown a public safety drone missions in direct response to the COVID-19 pandemic?

Answered: 248 Skipped: 41

ANSWER CHOICES	RESPONSES	
Yes	25.40%	63
No	71.77%	178
Unsure	2.82%	7
TOTAL		248

Q23: What type of public safety drone mission did your organization fly in direct response to the COVID-19 pandemic?

Answered: 63 Skipped: 226



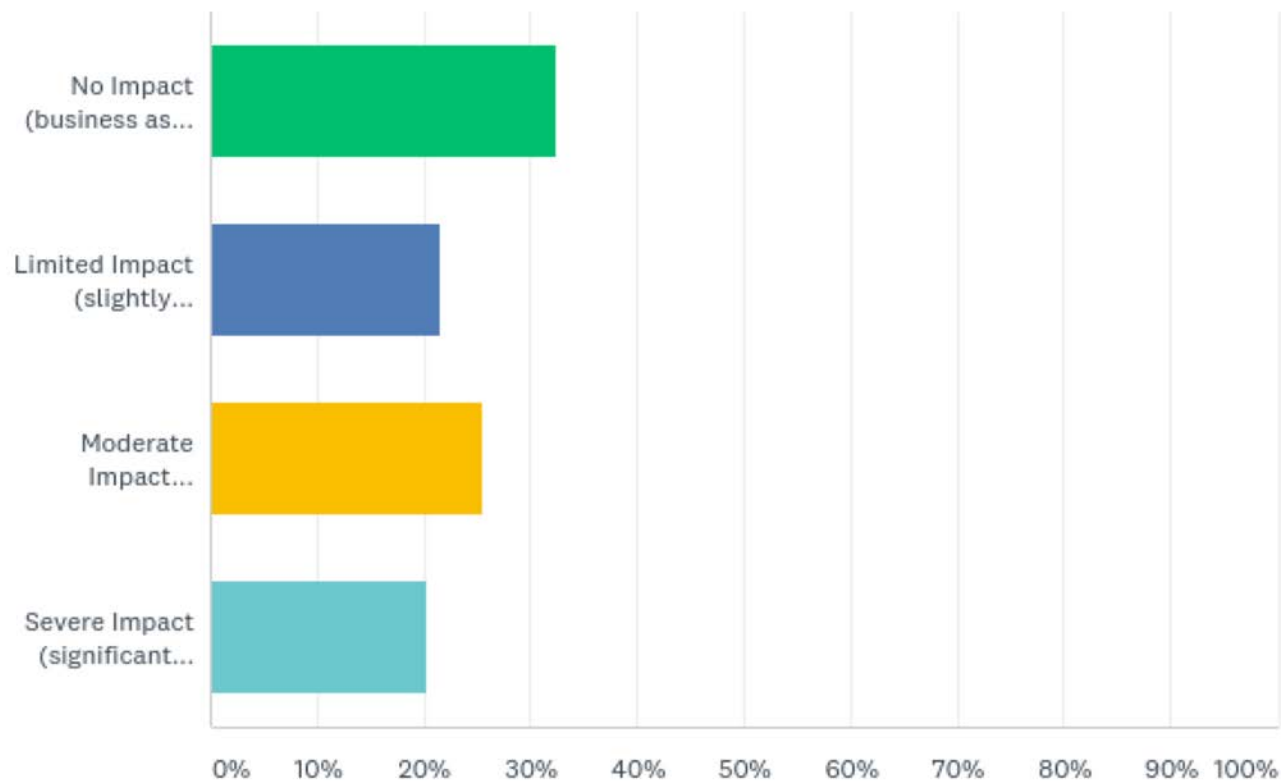
Q23: What type of public safety drone mission did your organization fly in direct response to the COVID-19 pandemic?

Answered: 63 Skipped: 226

ANSWER CHOICES	RESPONSES	
Decontamination / Disinfecting	0.00%	0
Public Information / Media Support	47.62%	30
Social Distancing Monitoring / Enforcement	25.40%	16
Other (please specify)	26.98%	17
TOTAL		63

Q24: What, if any, financial impact do you project the COVID-19 pandemic will have on your public safety UAS program for the foreseeable future?

Answered: 246 Skipped: 43



Q24: What, if any, financial impact do you project the COVID-19 pandemic will have on your public safety UAS program for the foreseeable future?

Answered: 246 Skipped: 43

ANSWER CHOICES	RESPONSES
No Impact (business as usual)	32.52% 80
Limited Impact (slightly reduced budget and/or tighter cost controls)	21.54% 53
Moderate Impact (moderately reduced budget and limited discretionary spending)	25.61% 63
Severe Impact (significantly reduced budget, no new purchases, no travel)	20.33% 50
TOTAL	246

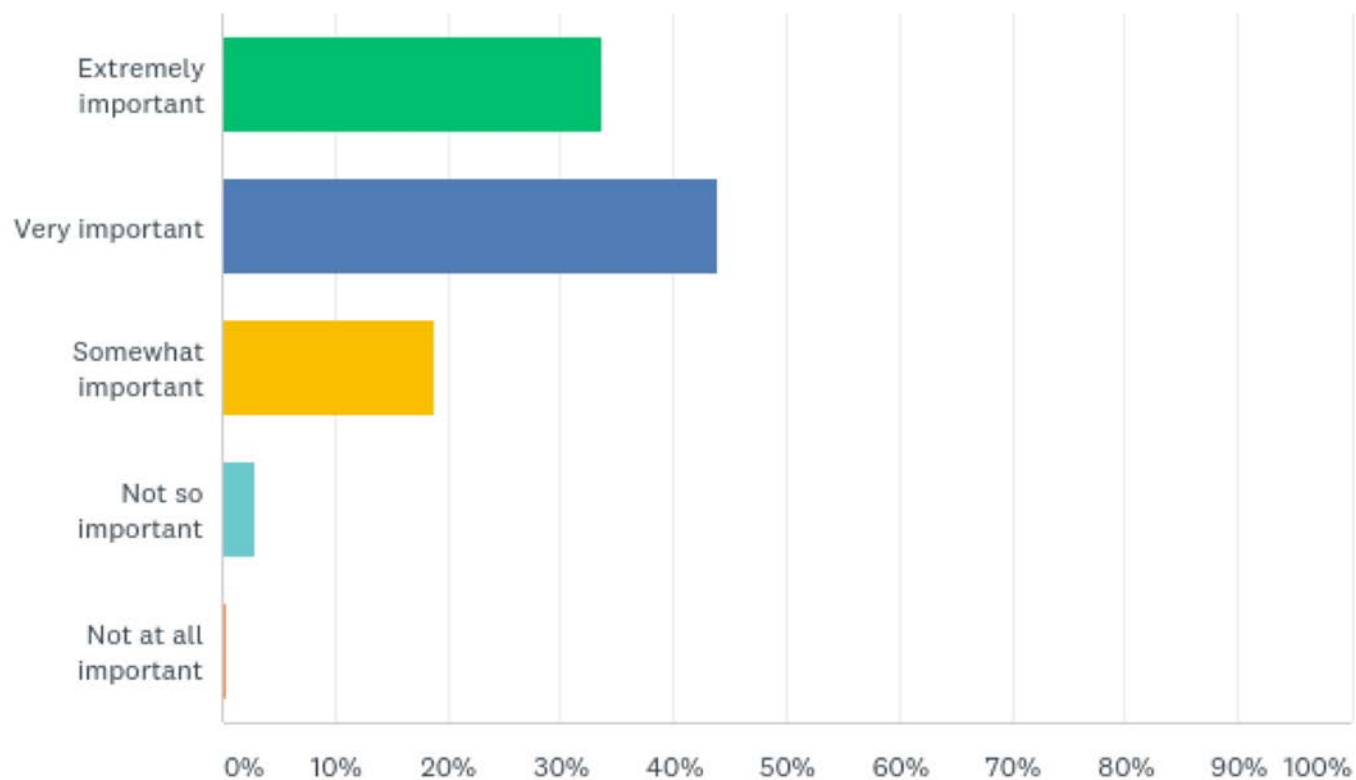


SECTION 7: SUMMARY



Q28: How important is the ability to track and understand how different public safety organizations around the world are using Drones For Good?

Answered: 243 Skipped: 46



Q28: How important is the ability to track and understand how different public safety organizations around the world are using Drones For Good?

Answered: 243 Skipped: 46

ANSWER CHOICES	RESPONSES	
Extremely important	33.74%	82
Very important	44.03%	107
Somewhat important	18.93%	46
Not so important	2.88%	7
Not at all important	0.41%	1
TOTAL		243

SUMMARY

Public safety UAS programs are growing as measured both in the number of remote pilots per program and the number of missions flown each calendar month. However, most public safety agencies are continuing to bootstrap their UAS program with small budgets and extremely limited funding.

The bulk of U.S. public safety agencies rely on some form of grant funding to sustain their UAS program. Uncertainty surrounding potential legislative action that could impact the ability of public safety agencies to procure certain drones and related parts via Federal grant money is causing significant concern for the majority of these programs.

Concern surrounding the security of drone data and other potential security vulnerabilities within foreign-made UAS technology is prevalent.

DJI brand drones continue to dominate the public safety UAS sector with more than a 90% market share. Skydio has surged to become the second-ranked player in the public safety sUAS sector within the last three calendar quarters. Autel, Parrot, and Yuneec all remain in close striking distance to Skydio for the #2 sUAS market position.

SUMMARY (CONTINUED)

90% of public safety UAS programs are operating under FAA Part 107. Most of these agencies claim to possess an FAA Airspace COA, but also use LAANC for certain flight operations. Training flights remain the most commonly flown mission in the public safety UAS community.

The COVID-19 pandemic is impacting the public safety UAS sector, but the outlook is not as dire as one might fear. One out of two public safety drone programs report a moderate to severe financial impact on their operations from the virus. Conversely, about half of public safety UAS programs expect to purchase one or more new UAS before the end of 2020. This bodes well for UAS manufacturers targeting the increasingly competitive public safety sector.

One out of four public safety UAS programs reports having flown drones in direct support of a COVID-19 mission. The vast majority of these were for public information missions.

Counter-drone technology remains an emerging segment of the market with 40% of public safety UAS programs claiming to have interest in deploying C-UAS tech for public safety purposes.

Finally, 97% of public safety UAS professionals believe it is important to track and understand how public safety organizations around the world are using Drones For Good.



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