

Future Trends

- Increasing autonomy of sUAS
- Skills shift from active piloting to system monitoring
- Multiple aircraft controlled by one pilot
- Trend to move beyond visual line of sight (BVLOS) will require new skills sets & technologies
- Integration into national airspace
- Increasing FAA requirements may lead to change in licensure/certifications needed
- Regulatory environment evolving
- Commoditization/saturation in sUAS field (personnel, hardware, software)
- Increase in data processing automation
- Massive data storage and access to data
- Maturation of sUAS technologies
- Industry consolidation
- More pilots/aircrafts lead to more safety concerns and case law
- Developing role of insurance (liability)
- Industry standards effect on insurance
- Public acceptance of sUAS
- Cybersecurity considerations
- Night operations
- Large UAS operations

Acronyms

- ATC - Air Traffic Control
- BVLOS - Beyond Visual Line of Sight
- FAA - Federal Aviation Administration
- FOD - Foreign Object and Debris
- GNSS - Global Navigation Satellite System
- GIS - Geographical Information System
- GPS - Global Position Satellite
- NOTAMS - Notices to Airmen
- OSHA - Occupational Safety and Health Administration
- PIC - Pilot in Command
- PPE - Personal Protective Equipment
- RC - Radio Control
- RF - Radio Frequency
- RTK - Real Time Kinematic
- SOP - Standard Operating Procedure
- sUAS - small Unmanned Aircraft Systems
- TFR - Temporary Flight Restrictions
- VLOS - Visual Line of Sight



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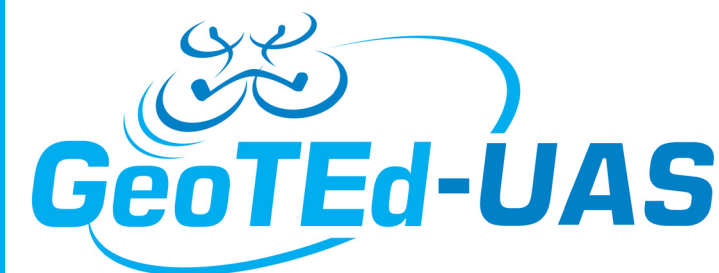
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DACUM Research Chart

Small Unmanned Aircraft Systems Operations Technician

Produced by:



DACUM Job Analysis Research Chart for Small Unmanned Aircraft Systems Operations Technician (sUAS)

DUTIES	T A S K S													
Plan sUAS Flight A	A.01	A.02	A.03	A.04	A.05	A.06	A.07	A.08	A.09	A.10	A.11	A.12	A.13	
	Define operation objective	Define area of operation	Assess area of operations (e.g. aviation, chart, map, NOTAMs, weather)	Define data requirements (e.g. data types, accuracies, frequencies, deliverables, format)	Plan flight path (e.g. manual or autonomous)	Obtain regulatory permissions (FAA)	Obtain landuse authorization (e.g. landowner, state/local permits)	Select sUAS to meet objective	Define aircraft configuration (eg. firmware, payload)	Conduct operational risk assessment	Establish operation communications plan (data links, radio, frequencies)	Assign sUAS and personnel	Rehearse flight operation	
Perform Flight Operation B	B.01	B.02	B.03	B.04	B.05	B.06	B.07	B.08	B.09	B.10	B.11	B.12	B.13	B.14
	Conduct site survey	Check advisory info (NOTAMs, weather, TFR)	Establish ground control points (GCPs)	Set up flight operations center	Assemble aircraft	Upload flight plan to aircraft	Calibrate sUAS sensors	Conduct flight checks of sUAS	Conduct safety briefing	Conduct mission briefing	Check for FOD	Verify use of PPEs	Communicate with crew and ATC	Secure launch and recovery area
	B.15	B.16	B.17	B.18	B.19	B.20	B.21	B.22	B.23	B.24	B.25	B.26	B.27	B.28
Launch aircraft	Fly sUAS *	Maintain visual contact with aircraft	Monitor site communications	Monitor air traffic communications	Collect geospatial data	Execute emergency procedures	Adapt flight plan	Recover aircraft	Retrieve geospatial data	Verify data integrity	Conduct post flight inspection	Conduct post flight debrief	Pack sUAS for transport	
Process Geospatial Data C	C.01	C.02	C.03	C.04	C.05	C.06	C.07	C.08	C.09	C.10	C.11			
	Transfer geospatial data	Prepare data for processing	Select processing software	Load data to system	Create 3-D point cloud	Create digital model	Create orthomosaic	Create derivative products	Generate data report	Deliver aerial images/videos	Disseminate deliverables to customer			
Maintain sUAS D	D.01	D.02	D.03	D.04	D.05	D.06	D.07	D.08	D.09	D.10	D.11	D.12	D.13	D.14
	Troubleshoot/repair electrical system	Troubleshoot/repair mechanical systems	Troubleshoot/repair airframe	Troubleshoot/repair fuel system**	Troubleshoot/repair propulsion/power plant	Troubleshoot/repair ground control station	Perform scheduled maintenance on electrical system	Perform scheduled maintenance on mechanical systems	Perform scheduled maintenance on airframe	Perform scheduled maintenance on fuel system**	Perform scheduled maintenance on propulsion/power plant	Perform scheduled maintenance on ground control station	Troubleshoot software	Update software
	D.15	D.16	D.17	D.18	D.19	D.20	D.21	D.22						
Inspect sUAS for maintenance issues	Inspect aircraft for air worthiness	Integrate pay loads	Implement configuration changes (e.g. hardware, software)	Document configuration changes (e.g. hardware, software)	Maintain maintenance logs	Conduct maintenance test flight	Maintain inventory of equipment/supplies							
Coordinate Flight Operations Logistics E	E.01	E.02	E.03	E.04	E.05	E.06	E.07	E.08	E.09	E.10	E.11	E.12	E.13	E.14
	Develop day of flight schedule	Communicate flight schedule	Coordinate mission dependent resources	Schedule mission personnel	Schedule transport vehicles	Establish transport route	Plan travel logistics	Acquire spare parts	Create pack list	Determine fuel/battery requirements	Facilitate personnel needs in the field (e.g. water, tent, chairs, etc.)	Secure mission supplies	Ship sUAS equipment	Charge UAS batteries
	E.15	E.16	E.17	E.18	E.19	E.20								
Pack sUAS equipment/supplies	Secure physical access to the operations area	Secure operations area	Transport sUAS equipment/supplies	Prepare operations area	Safeguard geospatial data									
Maintain Proficiency, Currency & Recency in Professional Knowledge/Skills F	F.01	F.02	F.03	F.04	F.05	F.06	F.07	F.08						
	Practice flying sUAS	Train on flight simulator	Attend professional conferences and training	Maintain membership in professional organizations	Maintain required certifications	Review professional literature	Participate in online forums	Participate in community awareness activities						
Perform Administrative Tasks G	G.01	G.02	G.03	G.04	G.05	G.06	G.07	G.08	G.09	G.10	G.11	G.12	G.13	
	Order equipment/supplies	Develop operations budget	Complete expense reports	Submit timesheets	Create proposals & presentation	Present to a variety of audiences	Submit accident reports	Train peers	Submit budget requests	Submit budget reports	Maintain company vehicle	File flight reports	Maintain flight logs	

* Denotes that the task may be performed within more than one duty.

** e.g. battery or liquid