CHARIS
UNMANNED AERIAL SOLUTIONS

CUSTOMER ENQUIRY FORM

CUSTOMER DETAILS	
CUSTOMER NAME	
ADDRESS	
ORGANISATION	
CONTACT NUMBER	
EMAIL	

DATE

JOB NUMBER

DATE REQUIRED

CLIENT VISIT REQUESTED
YES / NO

DESCRIPTION OF WORK REQUIRED

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PRE SITE SURVEY

JOB NUMBER	DATE

OPERATING SITE LOCATION		
OPERATING SITE NAME:		
SITE LATITUDE:		
SITE LONGITUDE:		
ALTITUDE AMSL:		ft AMSL
DATE WORK REQUIRED:		
IS THERE VEHICULAR ACCESS:	YES	NO
WORK REQUIRED:		

FLIGHT TEAM COMPOSITION	
PILOT IN COMMAND:	
OBSERVER:	
UAV REGISTRATION:	

ITEM	ACTION TO COMPLETE	FINDINGS
AIRSPACE	Airspace Class? (A,C,D,E,F,G) - ATC Permission Required?	
TERRAIN	What is the Terrain? (Flat, Mountainous, Boggy)	
PROXIMITIES	Other Aircraft (Aerodromes, Heli Pads, Model Sites)	
HAZARDS	Live Firing, High Intensity Radio Transmissions, Gas Venting	
RESTRICTIONS	Nuclear Power Stations, Prisons, High Intensity Radio	
SENSITIVITIES	Nature Reserves, Recreational Areas, Bye Laws	
PEOPLE	Local Habitation (Do we need to Letter Drop?)	
LIVESTOCK	Local Farms	
PERMISSION	Local Authority, Land Owner, Military Space	
ACCESS	Public Right of Way, Gates & Roads	
CORDON	Is a Cordon Required? (Do we need extra staff?)	
FOOTPATHS	Public Footpaths, Bridal Paths	
ALTERNATE	Alternative Operational / Take Off Sites	
RISK MITIGATION	Can the job be done at another time to avoid School times etc	
WEATHER	24 hour forecast	
NOTAMS	Any Notice to Airmen that may affect operations	

COMPLETED PRE-NOTIFICATION	If Notified, Record Date, Time & Contact Name
LOCAL AIR TRAFFIC CONTROL:	
MILITARY CONTROL:	
NOTICE TO AIRMEN:	

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CALL SHEET

JOB NUMBER	DATE

START TIME:	
LUNCH:	
FINISH TIME:	

WEATHER FORECAST	
WIND SPEED:	KNOTS
WIND DIRECTION:	
TEMPERATURE:	*C
HUMIDITY:	
CHANCE OF RAIN:	%

ROLE	NAME	CONTACT NUMBER
PILOT IN COMMAND:		
OBSERVER:		
SPOTTER 1:		
SPOTTER 2:		
HELPER 1:		
HELPER 2:		
FIRST AIDER:		
ACCOUNTABLE MANAGER:		

SHOT NUMBER	DESCRIPTION OF WORK REQUIRED
SHOT 1	
SHOT 2	
SHOT 3	
SHOT 4	
SHOT 5	
SHOT 6	
SHOT 7	
SHOT 8	
SHOT 9	

NOTES:

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RISK ASSESSMENT FORM

FLIGHT TEAM:	PILOT-IN-COMMAND:	OBSERVER:
	PAYLOAD OPERATOR:	AIRCRAFT:

1 – HAZARD	2 - AT RISK	3 - EXISTING CONTROL MEASURES	RISK			7 - FURTHER CONTROL MEASURES	RISK		
(Something with the potential to cause harm, how will it be realised and what is the potential injury?)			4 SEVERITY	5 PROBABILITY	6 RISK		8 SEVERITY	9 PROBABILITY	10 RISK

FURTHER ACTIONS (Further control measures which could be implemented at the planning stage to improve safety)

ADDITIONAL COMMENTS (Actions identified by personnel on site, to make the operation safer)

AUTHORIZED BY THE ACCOUNTABLE MANAGER	Name (Print):	SIGNED:

AT RISK (Column 2)	SEVERITY (Column 4 and 8)		PROBABILITY (Column 5 and 9)		RISK RATING (Columns 6 and 10)		
E - Employees	1	NO INJURY, PROPERTY DAMAGE	1	EXTREMELY UNLIKELY	Severity X Probability - 1 to 5	MIN	Y - Acceptable Risk
C - Client	2	MINOR INJURY	2	REMOTE POSSIBILITY	Severity X Probability - 5 TO 10	LOW	Y - Acceptable Risk
V - Visitors	3	REPORTABLE INJURY	3	WILL POSSIBLY OCCUR	Severity X Probability - 12 TO 15	MED	? - Needs further consideration
P - Public	4	MAJOR INJURY OR FATALITIES	4	WILL PROBABLY OCCUR	Severity X Probability - 16 TO 20	HIGH	N - Unacceptable Risk
A - All			5	ALMOST CERTAIN			

EMBARKATION CHECKLIST RG:9XR-00101-UA

ITEMS	out	out	Loste/Damaged
XAG CO.ltd/ P30			
P-Series Aircraft X1			
Propeller X4			
A2 Controller X1			
Battery X4			
RTK ROVER X1			
RTK STATION X1			
Tripod X1			
Balance Plate X1			
Battery Extension Rod X1			
Payload Container X2			
ARC1 Controller X1			
Radios			
Refilling Station X1			
Power Bank			
Charger-Aircraft X1			
Charger- RTK X1			
Charger-Controller X1			
Extension rod			

Name of

pilot . . . . . .

Signature……

Field……

Data……/……./2021

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ON SITE SURVEY

PILOT:
OBSERVER:

DATE

WIND SPEED
m/s

TEMP
*C

DIRECTION

ITEM	ACTION TO COMPLETE	FINDINGS
OBSTRUCTIONS	Masts, Power Lines, Buildings, Train Tracks, Trees, Lakes, Rivers, Canals or Industrial Hazards	
VISUAL LIMITATIONS	Anything that May Impair Vision? (Up to 5KM)	
CORDON	Is a Cordon Required? (Do we need extra staff?)	
LIVESTOCK	Any Animals or Wildlife Present Nearby?	
TERRAIN	Flat Surface, Rough, Sloped, Wet, Trees?	
PERMISSION	Do We Have the Land Owners Permission?	Signature:
PUBLIC	Public Right of Way, Footpaths, Gates	
AIR TRAFFIC	Do We Need & or Have Clearance?	
COMMUNICATION	Are Two Way Radios Required?	
PROXIMITY	Are We Far Enough Away from Buildings?	
TAKE OFF AREA	Where is the Safest Convenient Position?	
LANDING AREA	Where is the Safest Convenient Position?	
OPERATIONAL ZONE	Are there Any Hazards or Obstructions?	
EMERGENCY AREA	Where is the Safest Convenient Position?	

CONTACT NAME AND TELEPHONE NUMBERS
PILOT:
OBSERVER:
CLIENT:
LOCAL POLICE:
LOCAL HOSPITAL:
LOCAL AIR TRAFFIC CONTROL:

NOTES:

PRE FLIGHT CHECKLIST

		Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Flight 7	Flight 8	Flight 9	Flight 10
SYSTEM	Flight and Maintenance logs-WX and NOTAMS										
	Mandatory Safety Briefing										
	RTK Station is Set and Connected										
	Visual Inspection of Airframe										
	Motors-Free Rotation										
	Battery Secure-No Loose Objects-Antennas Secure										
	Payload Secure										
	A2&ARC1 Antennas Secure-Sufficient power										
	A2- Master On										
	Annucuators-RPS Connect										
	Flight Plan Created Via Mapping App										
	GPS Lock-Home point and Waypoints loaded										
	PROPS-No damage -Secure-Rotation Direction										

	Be familiar with the selected flight mode										
FLIGHT PLAN	Clear- No warnings										
	VHF-ON-Frequency Check-Call if Required										
BEFORE TAKEOFF	Check Site All Clear-Wind Direction-Observer READY										
	ARM-SYSTEM-CAUTION PROPS TURNING-CALL “CLEAR PROPS”										

POST FLIGHT CHECKLIST

		Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Flight 7	Flight 8	Flight 9	Flight 10
	ANNOUNCE ”Keep Clear of the Aircraft ”										
	Motor Rundown and Auto Disarm-Check Light										
	Battery Disconnect-Check Temp Normal										
	Record Time-ATC Advise Landed and Clear										
	Check Motor and ESC Temps Normal										
	Props Secure and Undamaged										
	Payload Equipment Removed										
	Connect Battery To Empty Residue in Spray System										
	Aircraft -Master Off										
	Battery Disconnect										
	Controllers-Master Off										
	Post Flight Airframe Inspection										
	Motors-Battery-Payload-All Secure										
	RTK -Master OFF										
	Complete Flight and Maintenance log										
	System Wash Down										
	Check Battery Used										

INCIDENT LOGBOOK

Date	Time	Injuries / Damage	Incident Details	Action Taken / Incident Report	Notes

IMPORTANT HINTS AND TIPS

A2: Operate Duration > 5hours

Spray System: - Droplet size (nM: 85-550) and 15L Volume/Payload

NetWeight: 15KG, MTOW: 38.5KG, Max Payload: 15KG

Spray Width: 3.5m Swath at 2m Height

Efficiency: 2Ha/Mission, 5.3/Hr Operation

Max Time: 30 min, Max Speed: 8m/s

WARNING
Based on the statistics on XAG UAS usage, 90% of accidents are caused by human error. XAG does not recommend operating XAG Unmanned Aerial System in Manual Mode and bear no responsibility for actions undertaken in Manual Mode.

RTK Base Station Setup

- RTK Base stations need to be set up in open areas with no obstruction in its immediate proximity.
- To be set up at the highest terrain possible.
- Tripod needs to be properly setup and ensure it is stable.
- The level bubbles within 1 ° range.

Battery Inspection

- Inspect the battery level to ensure there are sufficient powers for the planned task.
- For long duration task, it is recommended to connect the RTK Station with an external Power Bank to ensure the RTK station have sufficient battery for the whole task.

XAG P-Series Spray Swath			
Height	P10 Swath	P20 Swath	P30 Swath
1.0m	1.5m	2.0m	2.5m
1.5m	2.0m	2.5m	3.0m
2.0m	2.5m	3.0m	3.5m
2.5m	3.0m	3.5m	4.0m
3.0m	3.5m	4.0m	4.5m
3.5m	4.0m	4.5m	5.0m

XAG Atomization Level Table			
Level	RPM	2017	2018
1	1000		550 um
2	2000		285 um
3	3000	235 um	200 um
4	4000	195 um	165 um
5	5000	165 um	150 um
6	6000	150 um	135 um
7	7000	140 um	125 um
8	8000	125 um	120 um
9	9000	120 um	115 um
10	10000	115 um	110 um
11	11000	110 um	105 um
12	12000	105 um	100 um
13	13000	100 um	95 um
14	14000	95 um	95 um
15	15000	95 um	90 um
16	16000	90 um	85 um

IMPORTANT

The Recommended Spray Height is 2.0M

These Charts is for reference ONLY

IMPORTANT

1. Ensure Remote Controller, XAG P-Series Smart Battery, RTK Smart Battery are fully charged
2. Propellers are mounted correctly and firmly
3. Motors can start and are functioning normally
4. UAS Battery is properly inserted and secured
5. Liquid Container is properly inserted and secured
6. A2 Pilot phone is successfully connected to the aircraft.

WARNING

- Confirm the Operation Area is within the RTK Coverage radius
- Ensure Aircraft is in GPS Mode (Aircraft Status Indicator – Green Flash x 3)
- Ensure Flight Route Safety (Position, Size and Height)
- Propellers are in good condition and firmly secured
- Nothing obstructing the motors
- Motors are in good condition and working
- Strong GNSS Satellites

WARNING

- Confirm the Operation Area is within the RTK Coverage radius
- Ensure Aircraft is in GPS Mode (Aircraft Status Indicator – Green Flash x 3)
- Ensure Flight Route Safety (Position, Size and Height)
- Propellers are in good condition and firmly secured
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WARNING

USE ONLY Water for Nozzle Cleaning

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COMBINED PILOT &AIRCRAFT HOURS LOGBOOK

DATE (DD/MM/YY)	TAKE-OF F TIME (HH:MM)	LANDING TIME (HH:MM)	AIRCRAFT SYSTEM NAME	BATTERY NUMBER	PILOT-IN-COMMA ND	LOCATION NAME	PURPOSE OF FLIGHT	COMMENTS AND MINOR INCIDENTS

BATTERY LOGBOOK

№	Battery ID	Battery serial number	Pre-flight battery charge %	Post-flight battery charge %	Duration in minutes	Notes
1						
2						
3						
4						
5						
6						
7						
8						

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BATTERY CHARGE LOGBOOK

№	Battery ID	Battery serial number	Battery Residual charge %	Action Charge/Discharge or Storage mode	Charge input mAh	Time taken	Comments
1							
2							
3							
4							
5							
6							
7							
8							