OSE UGV (UNMANNED GROUND VEHICLE) BLOCK V

USAGE RISK ASSESSMENT

Osprey Systems
Engineering Ltd
Derwent Mills Commercial
Park
Cockermouth
Cumbria
CA13 0HT

Telephone: +44
(0)7935917928

Authorisations

	Name	Signature	Date
Prepared By	Dr. Benjamin Bird		04/02/2024
Checked By	Dr. Benjamin Bird		04/02/2024
Approved By	Dr. Benjamin Bird		04/02/2024
Accepted By	Dr. Benjamin Bird		04/02/2024

Document History

Issue	Date	Status / Changes
1	04/02/2024	Initial Document

Title:	OSE UGV Usage Risk Assessment
Scope of work:	All general use-cases of the OSE UGV
Location:	All locations

Severity						
Likelihood of Event		C	Cr	Se	M	N
	F	U	U	H	M	L
	P	U	U	H	M	L
	O	H	H	M	L	T
	R	M	M	L	T	T
	I	L	L	T	T	T

Severity	
C	**Catastrophic** (Multiple fatalities severe widespread environmental damage)
Cr	**Critical** (Single fatality and/or multiple severe injuries, occupational illness or environmental impact)
Se	**Serious** (Single severe injury or occupational illness and/or multiple minor injuries or minor occupational illness)
M	**Minor** (Minor injury/short term absence)
N	**Negligible** (Trivial injury (First aid only)/ environmental damage to plants)

Likelihood	
F	**Frequent** (Not surprised, will occur several times)
P	**Probable** (Occurs repeatedly/an incident to be expected)
O	**Occasional** (Could occur sometimes)
R	**Remote** (Unlikely though conceivable)
I	**Improbable** (Could happen but probably never will)

Comments:

Risk Rating	
Unacceptable/Very High Risk	Work shall not proceed or facility shall not be used.
High	Reduce risk through additional controls if practicable, if not, Permit to Work may be required in addition to Safe Method of Work; competency levels appropriate and documented.
Medium	Reduce risk through additional controls if practicable, if not, add to the Safe Method of Work the levels of competency should be appropriate.
Low	This work which may be of a routine nature will require a Safe Method of Work.
Trivial	Additional controls required only if the benefits justify the effort.

What Are the Potential Hazards?	Who Will This Effect and How?	Likelihood	Severity	Risk Rating	What Are You Doing About It?	Likelihood	Severity	Risk Rating

Risk of RF interference	Anyone using the OSE UGV	N	I	T	RF (Wi-Fi) module is certified and compliant with FCC standards. It is however conceivable that some legacy communications may not themselves be compliant with current regulations. It is VERY unlikely that this will cause interference, as legacy radio comms does not operate on the 2.4GHz and 5GHz spectrums. If deploying the UGV in an environment with mission sensitive, legacy RF infrastructure, device should be qualified for use with reverent personnel to insure it does not interfere.	N	I	T
Risk of electrocution	Anyone using the OSE UGV	I	M	T	Device utilises low voltage electronics only, aside from the AC charger. Use only the manufacturer provided battery charger.	I	M	T
Risk of fire	Anyone using the OSE UGV	R	Se	L	Do not disassemble device or attempt to modify, do not crush device, do not subject device to high G-force impacts, do not use device if damaged. Charge with provided Li-Ion charger only. Do not charge device whilst it is powered on. Battery has independent BMS installed	I	M	T
Risk of EMI interference	Anyone using the OSE UGV	N	I	T	Device itself has been tested and found to comply with EMI regulations. If deploying UGV in an environment with mission sensitive, legacy RF infrastructure, device should be qualified for use with reverent personnel to insure it does not interfere.	N	I	T
UGV falling and striking someone	Anyone using the OSE UGV, or people near by	R	Se	L	User should ensure the UGV is operated in an environment where all persons are aware of its presence. Operators should take care not to operate the UGV near ledges or other aspects of the environment that could cause a fall. A risk assessment should be conducted before the UGV is deployed to ensure all hazardous areas are identified and avoided if possible. Proper signage should be used in the are to make all personnel aware of the robotic operations.	I	Se	T

UGV falling and pulling plugged in equipment with it, causing damage to that equipment	Anyone using the OSE UGV, or people near by	O	N	T	The UGV should be charged in an area free from foot traffic. Cable management procedures for the charging cable should be practised and the area kept neat and tidy. User should ensure appropriate cable management is conducted, and working area is tidy.	R	N	T
UGV colliding with someone during operations, or colliding with an object in the environment	Anyone using the UGV or anyone in the area of operations	O	N	T	Proper signage should be placed in the area of operations to alert people of the robots presence. All personnel should be notified of the robots presence All personnel should keep a minimum of two meters away from the UGV during operation. Users should maintain at least 0.2 m away from all objects within the environment. Users should ensure they are familiar with, and utilise the UGV emergency stop button.	R	N	T