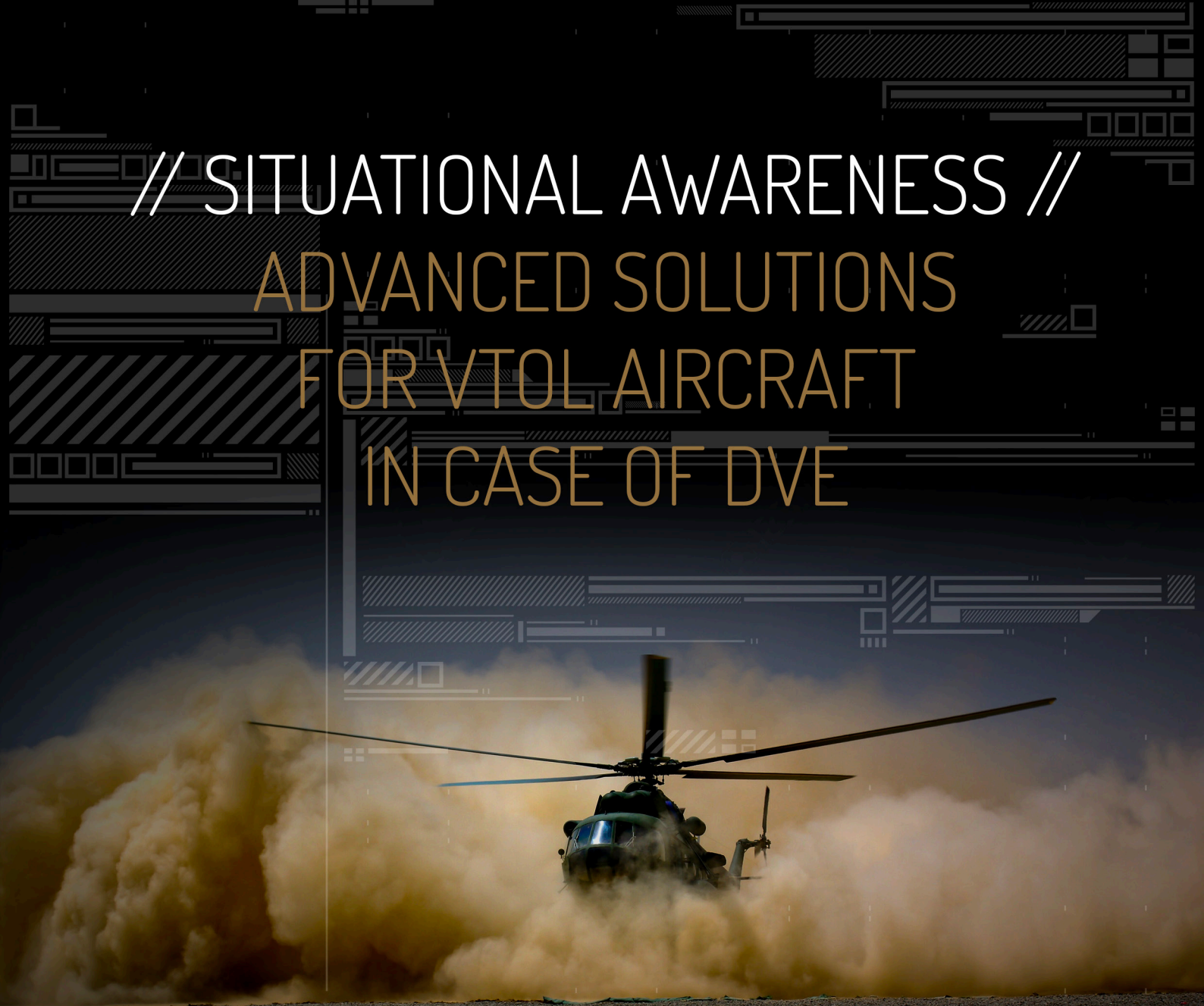
// SITUATIONAL AWARENESS //

ADVANCED SOLUTIONS FOR VTOL AIRCRAFT IN CASE OF DVE



SAND / DUST

FOG

SNOW

NIGHT

NEXVISION

OUR SOLUTION TO ENHANCE VISIBILITY & UNDERSTAND THE ENVIRONMEN

#Identify

PROXY VTOL 30m

Sensor #1 : Flash LIDAR
Active imaging / VNIR band

Sensor #2 : Millimetric RADAR

Sensor #3 : Panoramic Video Camera
Color sensor / Visible band

#Recognize

APPROACH VTOL 100m

Sensor #1 : Flash LIDAR
Active imaging / SWIR band

Sensor #2 : Millimetric RADAR

Sensor #3 : Infrared Camera
Thermal sensor / LWIR band

#Detect

SENSE & AVOID 500m

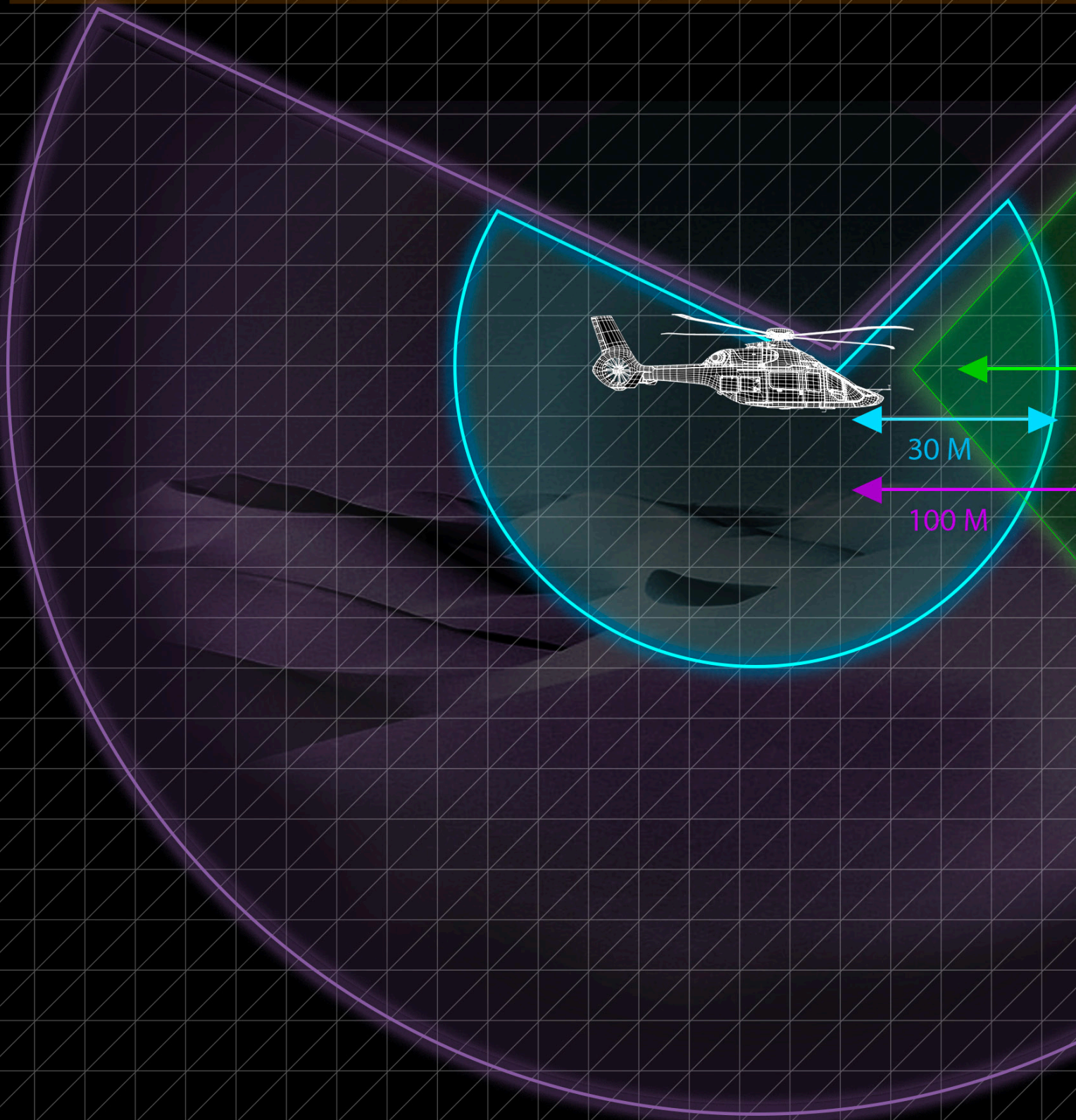
Sensor #1 : LIDAR
Time of flight (ToF) / SWIR band

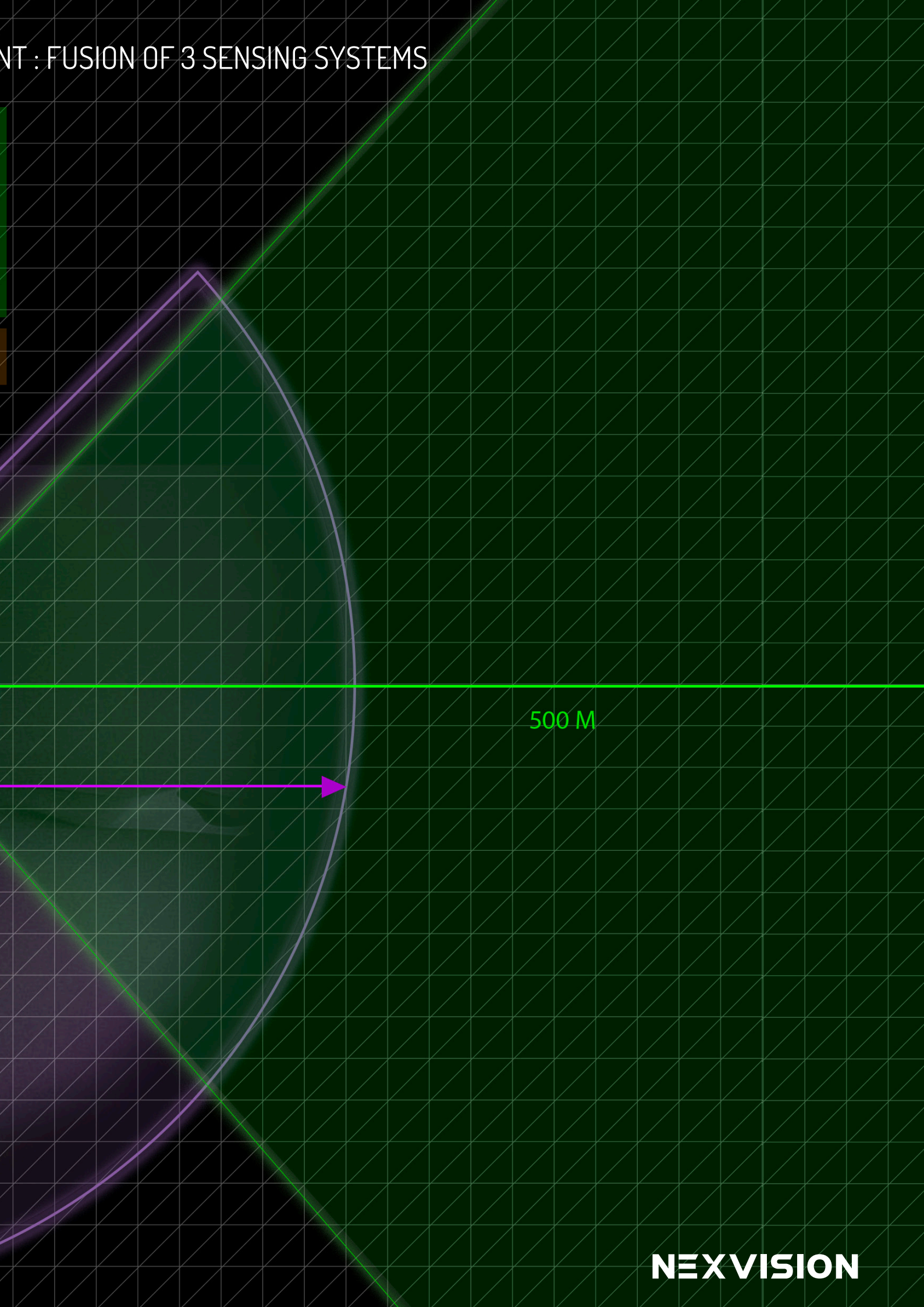
Sensor #2 : Infrared Camera
Thermal sensor with zoom / MWIR band

Sensor #3 : Video Camera
4K night sensor with zoom / Visible band

PROCESSING & ANALYSING UNIT

AI / Augmented reality




NT : FUSION OF 3 SENSING SYSTEMS
500 M
NEXVISION

SPECIFICATIONS

		ACTIVE 3D IMAGING		PASSIVE 2D IMAGING	
		Imaging RADAR (millimeter wave)	**Imaging LIDAR**	**Thermal CAMERA**	**Visible CAMERA**
PROXY VTOL ~30m **#Identify details :** Human behavior, obstacle, tree, ground position and soil type...	Bandwidth	77GHz	VNIR		VNIR + VISIBLE
	Field of view	90° (V) x 15° (H)	60° (V) x 45° (H)		80° (V) x 55° (H)
	Useful range	40m	50m		> 1km
	Resolution / Accuracy at 30m	Depth : NC / 20cm Angular : NC / 4.5cm (1°)	QVGA 320 x 240px / 10cm (0.2)°		7Mpx (4K) / 1.3cm (25m°)
	Nb per A/C	25	25		10
	Size	5cm x 5cm	8cm x 5cm		3cm x 3cm
	Sensor cluster location	4x clusters on corners + 1 xbelow	4x clusters on corners + 1x below		4x clusters on corners + 1x below
APPROACH VTOL ~100m **#Recognize / Classify :** Vehicle, human, building, relief...	Bandwidth	60GHz or 94GHz	VNIR	LWIR	
	Field of view	120° (V) x 120° (H)	80° (V) x 60° (H)	80° (V) x 60° (H)	
	Useful range	200m	100m	> 1km	
	Resolution / Accuracy at 100m	tbd	SVGA 800 x 600px / 5.2cm (0.1°)	VGA 640 x 480px / 10cm (62m°)	
	Nb per A/C	4	6	6	
	Size	30cm x 20cm	3cm x 3cm	3cm x 3cm	
	Sensor cluster location	1x front + 2x on sides + 1x below	4x clusters on corners + 1x below + 1x front	4x clusters on corners + 1x below + 1x front	
SENSE & AVOID ~500m **#Detect :** Cable, relief, aircraft, flock of birds...	Bandwidth		SWIR	LWIR	VNIR + Visible
	Field of view		80° (V) x 60° (H)	80° (V) x 64° (H)	80° (V) x 55° (H)
	Useful range		1km	> 1km	> 1km
	Resolution / Accuracy at 500m		Flash Lidar : 256 x 128px Scan : dynamic, 1° steps Accuracy : 3.4cm (4m°)	SXGA 1280 x 1024px / 54cm (62m°)	7Mpx (4K) / 21cm (25m°)
	Nb per A/C		1	1	4
	Size		15cm x 15cm	12cm x 12cm	8cm x 8cm
	Sensor cluster location		Front	Front	Front

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