FLEETLIGHTS
—
TECHNICAL GUIDE

Everything you need to know

direct line®

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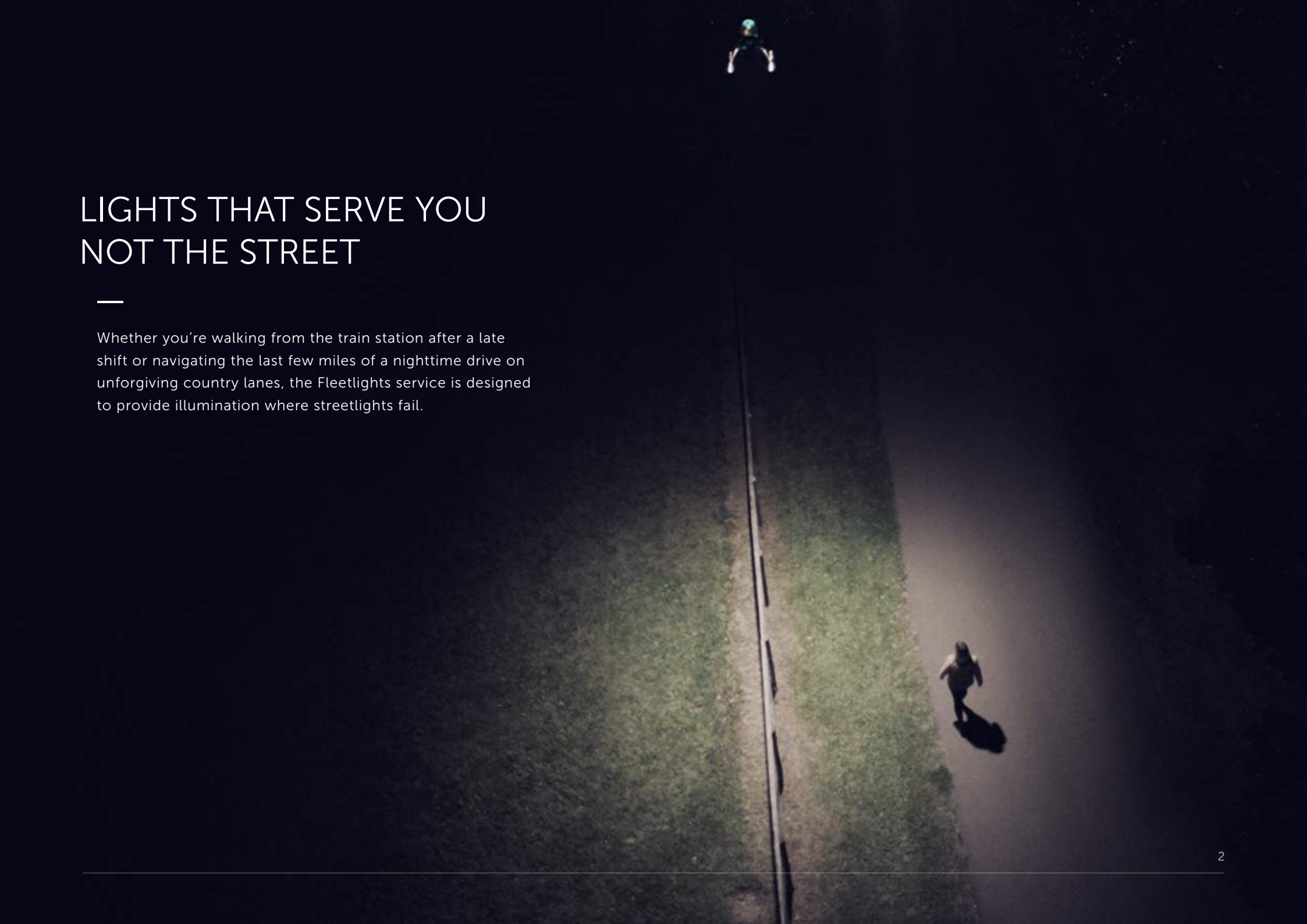
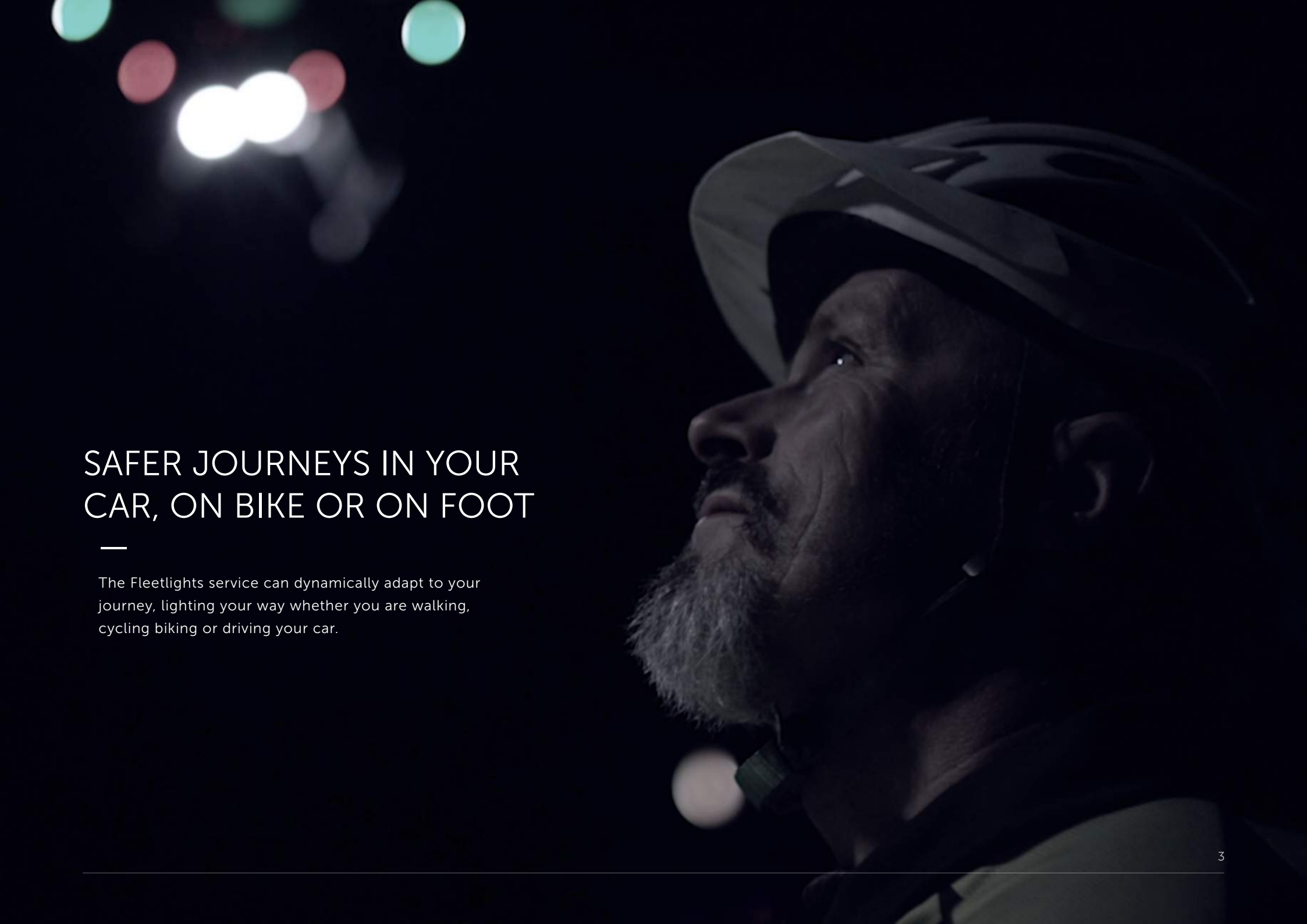
FLEETLIGHT SERVICE

The Fleetlights service is made up of a swarm of interconnected UAVs (drones) equipped with high-powered on-board lights that can be summoned on demand from your smartphone to provide bright illumination wherever you're heading, or whatever you're doing.

LIGHTS THAT SERVE YOU NOT THE STREET

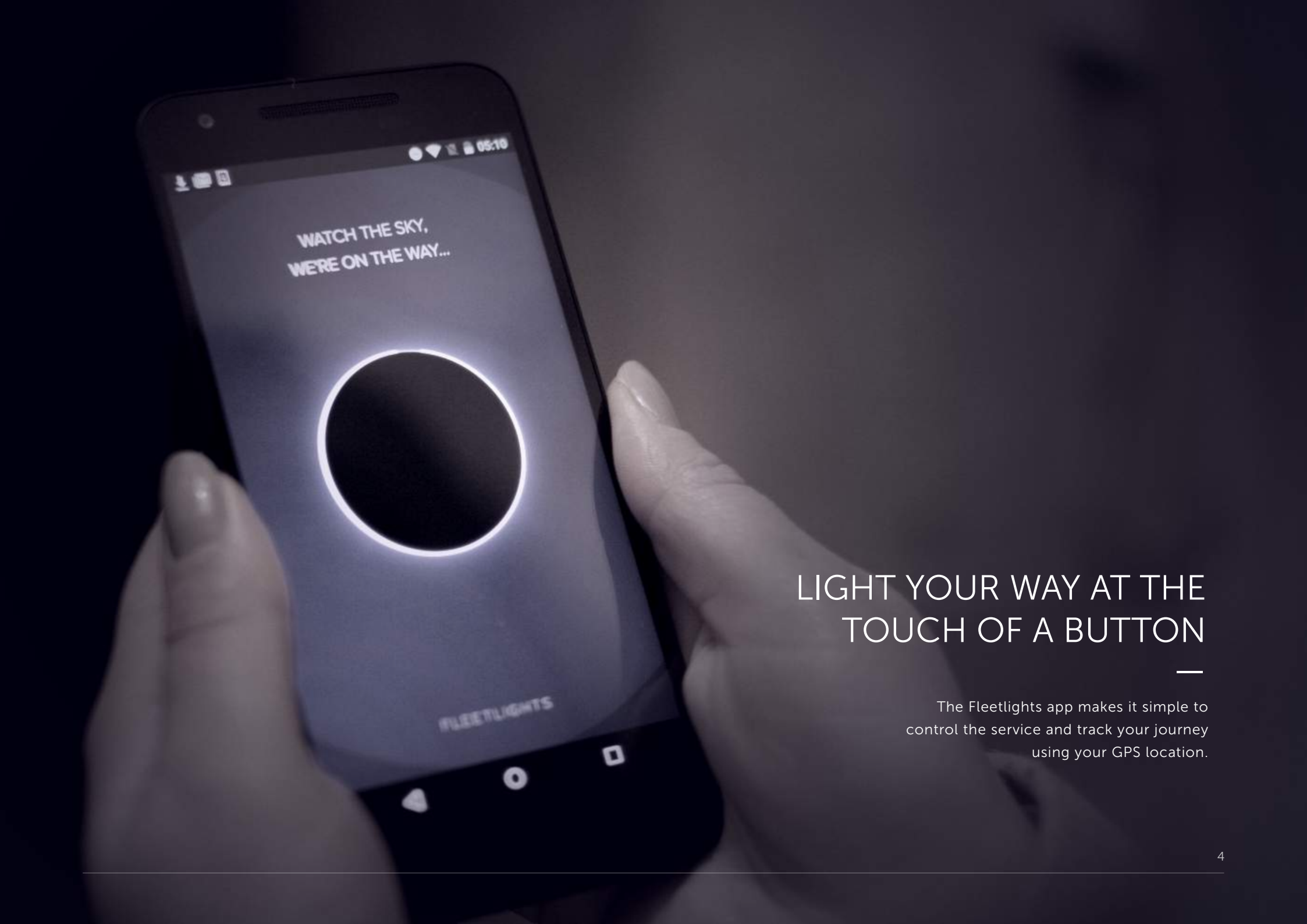
Whether you're walking from the train station after a late shift or navigating the last few miles of a nighttime drive on unforgiving country lanes, the Fleetlights service is designed to provide illumination where streetlights fail.





SAFER JOURNEYS IN YOUR CAR, ON BIKE OR ON FOOT

The Fleetlights service can dynamically adapt to your journey, lighting your way whether you are walking, cycling biking or driving your car.



LIGHT YOUR WAY AT THE TOUCH OF A BUTTON

The Fleetlights app makes it simple to control the service and track your journey using your GPS location.

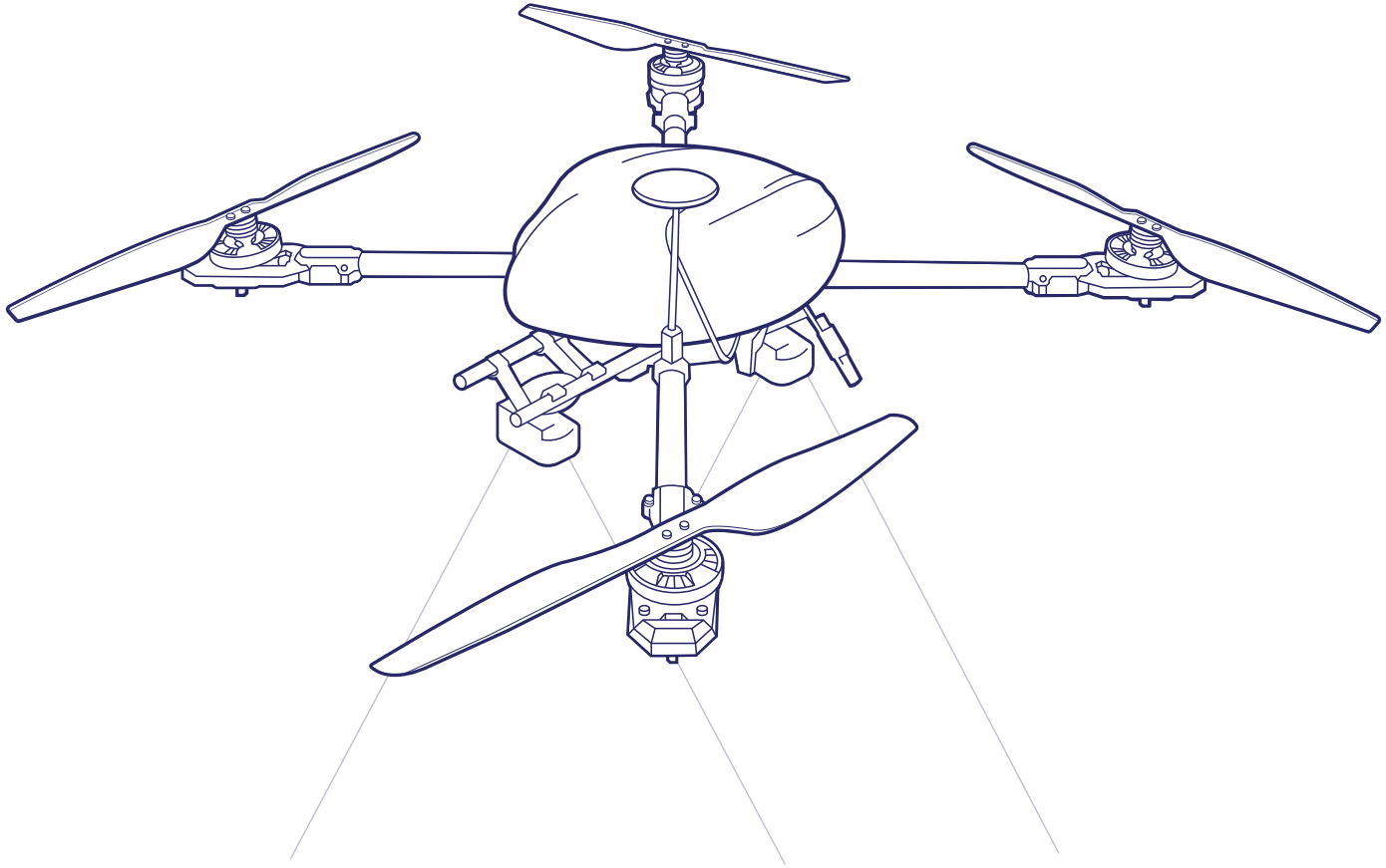
MEET THE FLEET: STANDARD FLEETLIGHT

The inaugural fleet is comprised of 20 drone platforms.

15 standard Fleetlight drones, designed for personal use and equipped with a single, high-efficiency lighting unit.

SPECIFICATIONS

Wheel Base: 650mm
Engines: 4
Material: Carbon-fibre airframe with stainless steel and titanium fixings
Flight Controller: Dual IMU with redundant compass and GPS units
Power Supply: 2x Lithium Polymer batteries for redundancy
Recovery System: Autonomous
Weight: 2kg or Less
Ground Control: 2.4Mhz RC with telemetry and mapping via a 433 or 895Mhz r adio system
Sensor: Ultrasonic and flow control
Landing Gear: Retractable
Maximum Speed: 15 metres per second
Range: 1.5 miles
Ceiling: 400 Feed
Flight Time: 20-30 minutes in hover

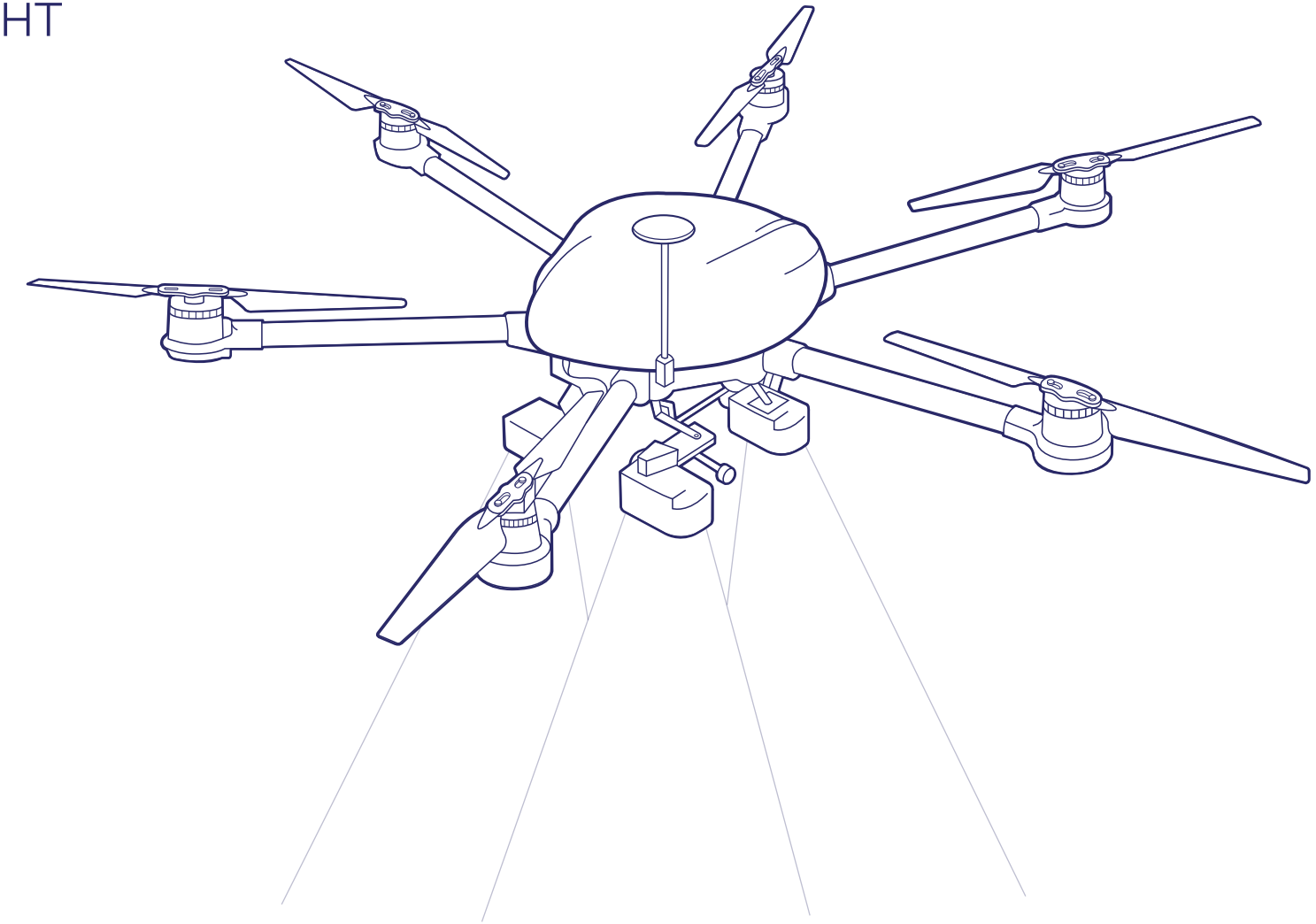


MEET THE FLEET: ADVANCED FLEETLIGHT

When maximum illumination at high speeds is required, the fleet has 5 advanced platforms. Travelling at up to 60mph, these lightweight, six-engine hexacopters carry 3 lighting units and are made using aircraft grade materials for the very best performance available.

SPECIFICATIONS

Engines: 6
Material: Carbon-fibre airframe with stainless steel and titanium fixings
Flight Controller: Dual IMU with redundant compass and GPS units
Power Supply: 2x Lithium Polymer batteries for redundancy
Recovery System: Autonomous
Weight: 7kg or less
Ground Control: 2.4Mhz RC with telemetry and mapping via a 433 or 895Mhz Radio System
Sensor: Ultrasonic and flow control
Landing Gear: Retractable

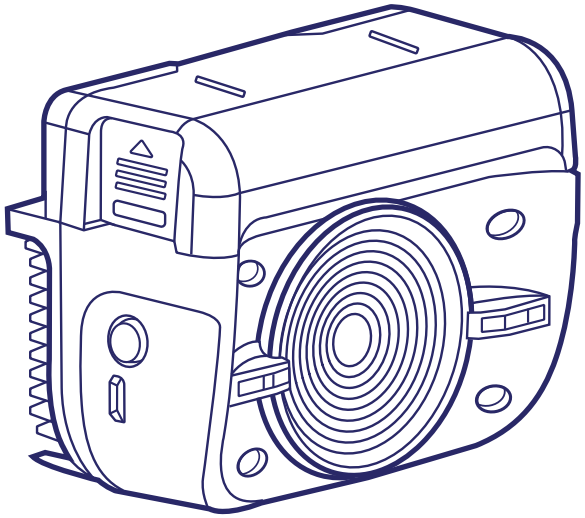


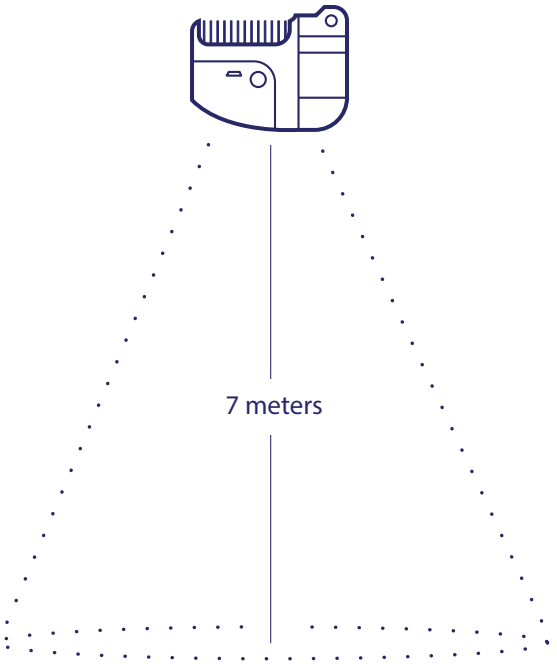
MEET THE FLEET:
FIILEX AL250 LIGHTING UNIT

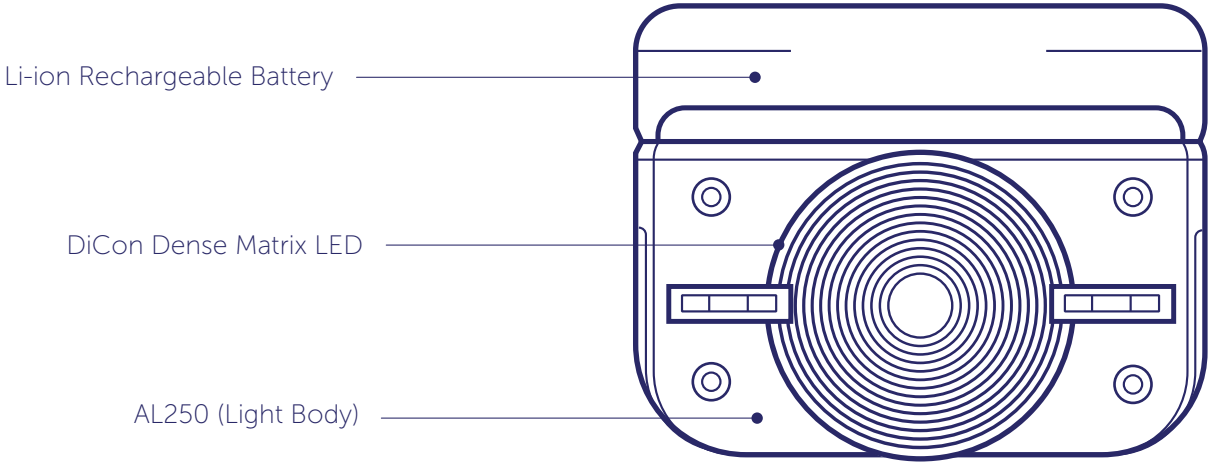
Operational from any height and with a minimum beam focus of 7 meters from the ground, each Fleetlight is equipped with at least one Fiilex AL250 lighting unit to provide total control and a 200W Tungsten beam, while only drawing 30W of power. The Fiilex's Dense Matrix technology focuses a flicker-free beam to more than double central luminance – the perfect solution for Fleetlights' target lighting.

SPECIFICATIONS

Size: 3.7" x 3" x 2" (L x W x H)
Weight: 0.6lbs / 250 g
Material: PC & ABS housing with aluminium heat sink
LED: DiCon Dense Matrix LED
Thermal Design: Fanless Cooling System
Beam Angle: 38 degrees
CCT: 5600K
CRI: 93
Power consumption: 30W
Input voltage: 5V DC, 2A
Charger: 100 - 240V AC, 50-60Hz (In) 5V DC, 2A (Out)
Battery: Li-ion Rechargeable Battery - 7.2V 2600mAh
Charging time: 25 minutes
Run time: 25mins (at max power)
Temperature range: 32-100F / 0-40C







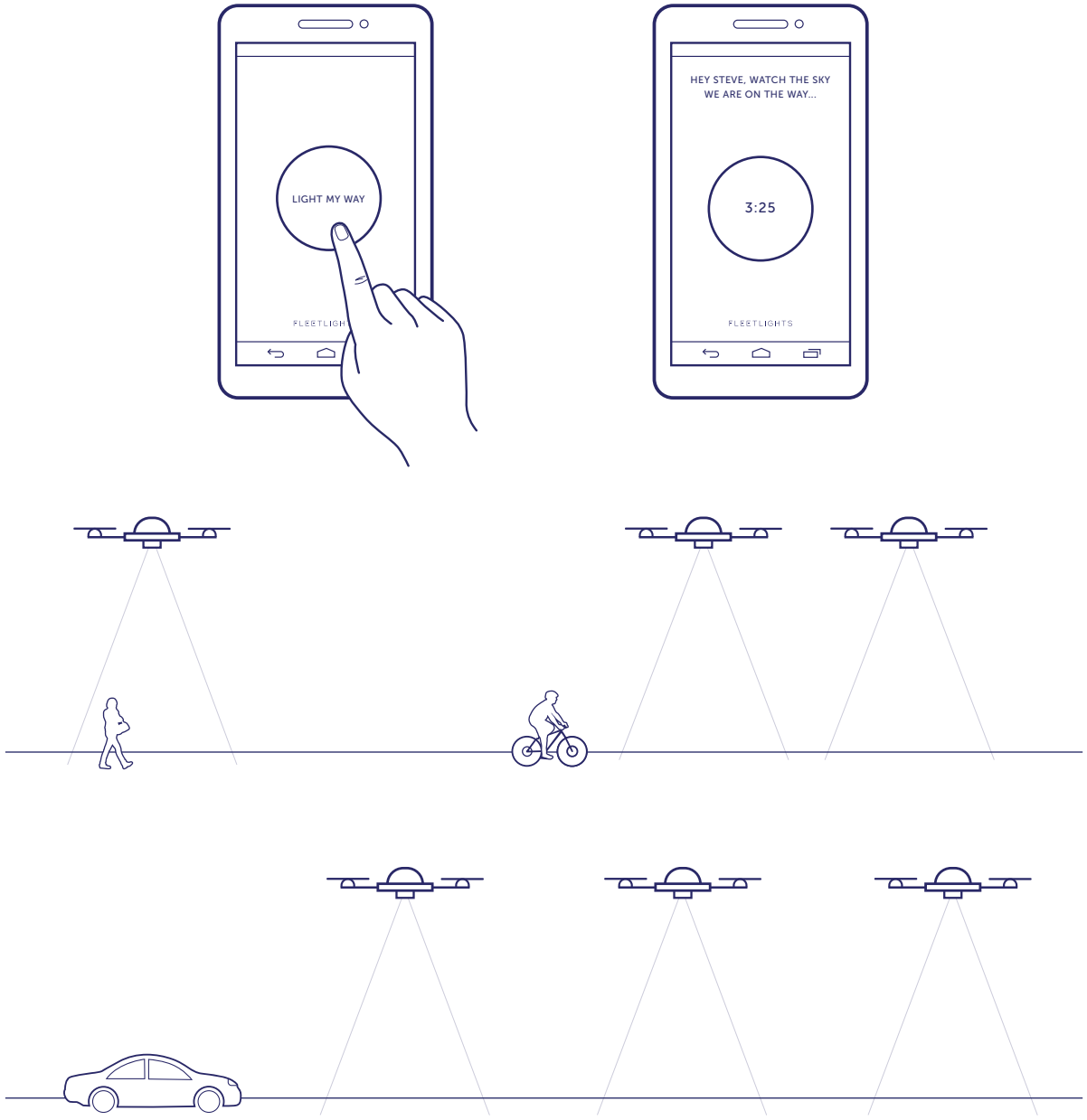
HOW IT WORKS: THE FLEETLIGHTS APP

This smartphone application links you to the Fleetlights service in your area and lets you request light for your journey at the touch of a button.

Once you request the service from the app, a notification is sent to the local Fleet Control station telling the operator where you are and what type of service you require.

The operator then assigns available members of the Fleet to your GPS location using data from your smartphone.

You can monitor the arrival time of the Fleet using the app. When your journey is finished you can also dismiss the Fleet with a simple tap. The operator will then recall the Fleet back to Fleet Control for charging.

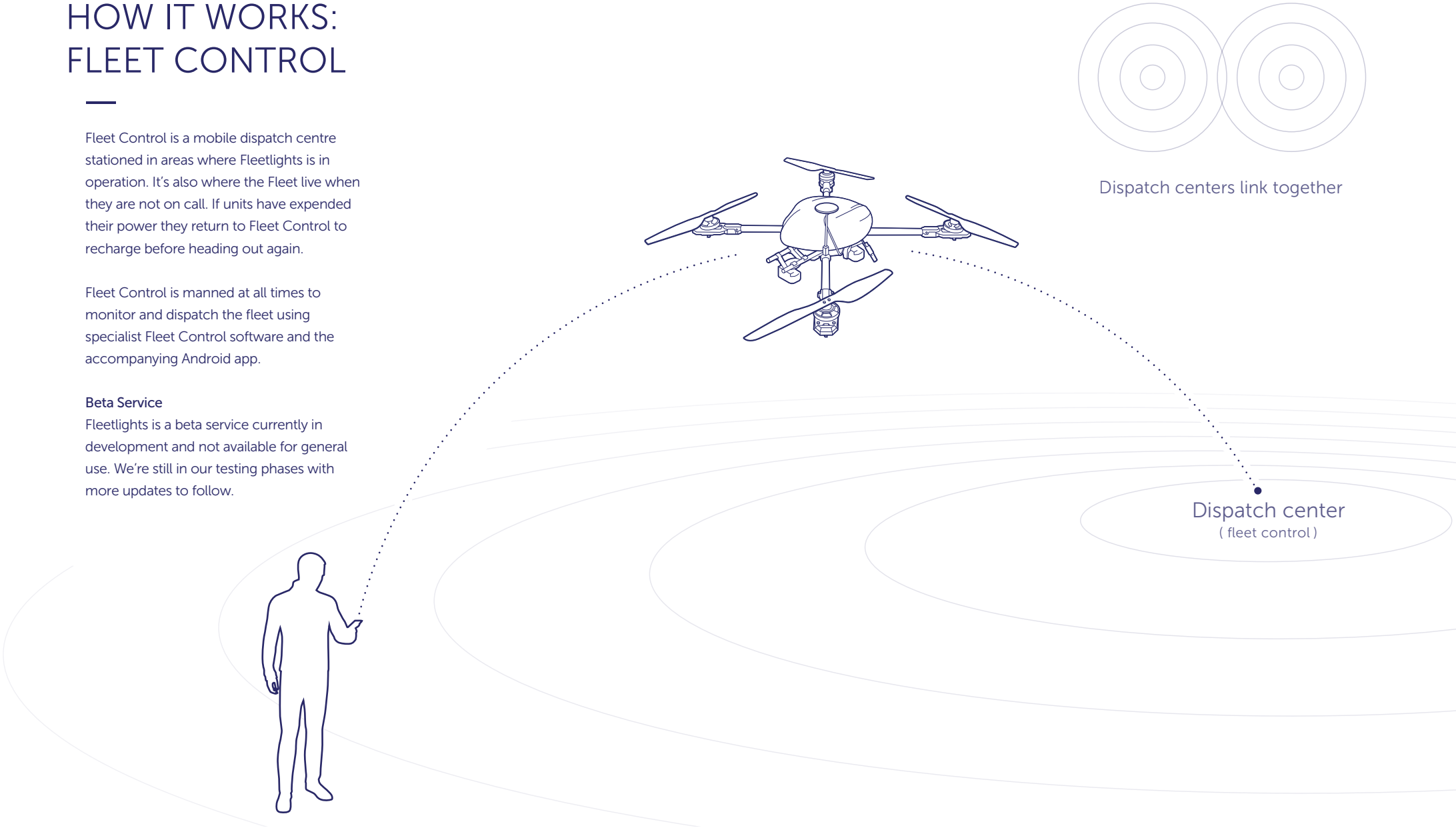


HOW IT WORKS: FLEET CONTROL

Fleet Control is a mobile dispatch centre stationed in areas where Fleetlights is in operation. It's also where the Fleet live when they are not on call. If units have expended their power they return to Fleet Control to recharge before heading out again.

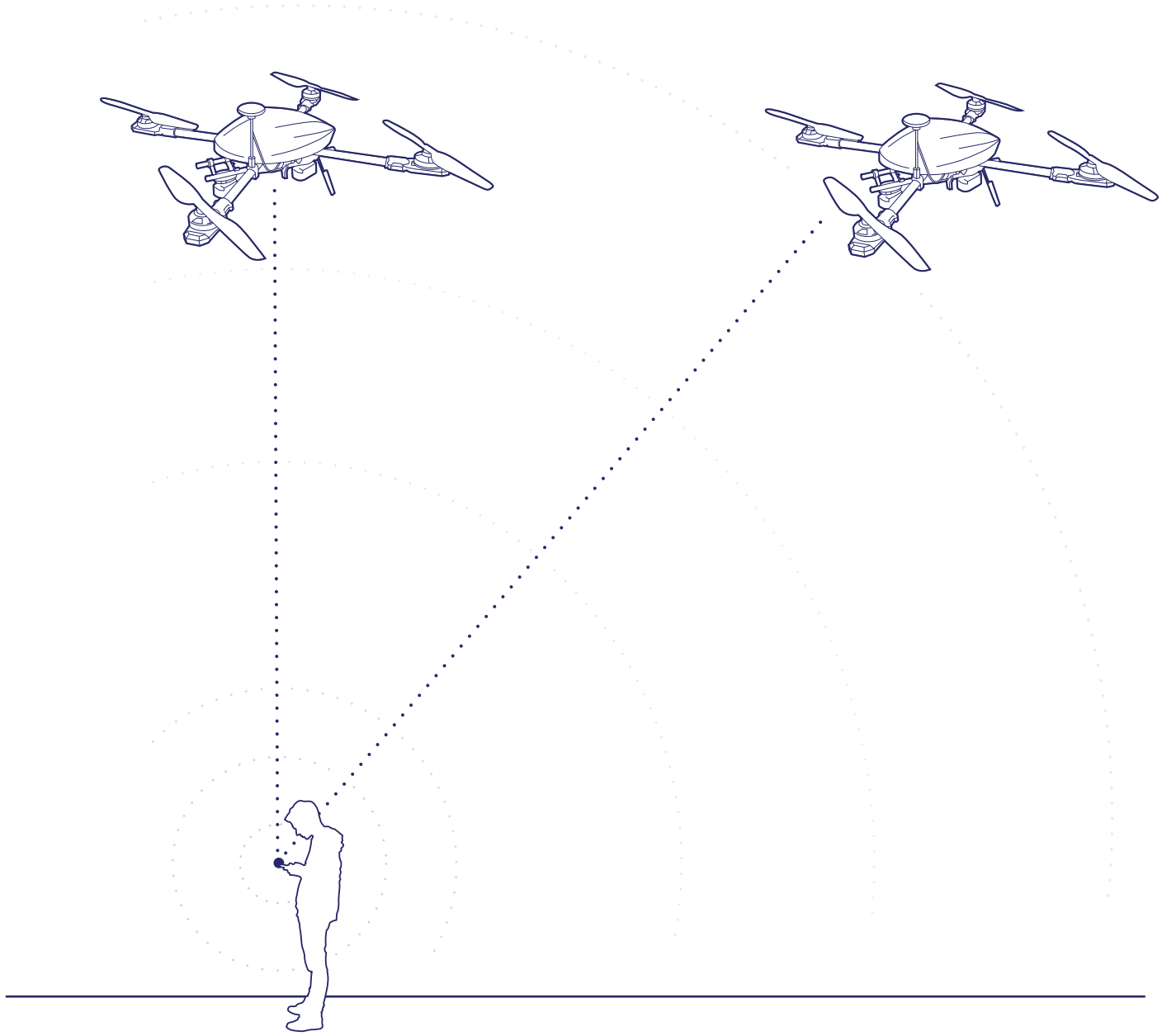
Fleet Control is manned at all times to monitor and dispatch the fleet using specialist Fleet Control software and the accompanying Android app.

Beta Service
Fleetlights is a beta service currently in development and not available for general use. We're still in our testing phases with more updates to follow.



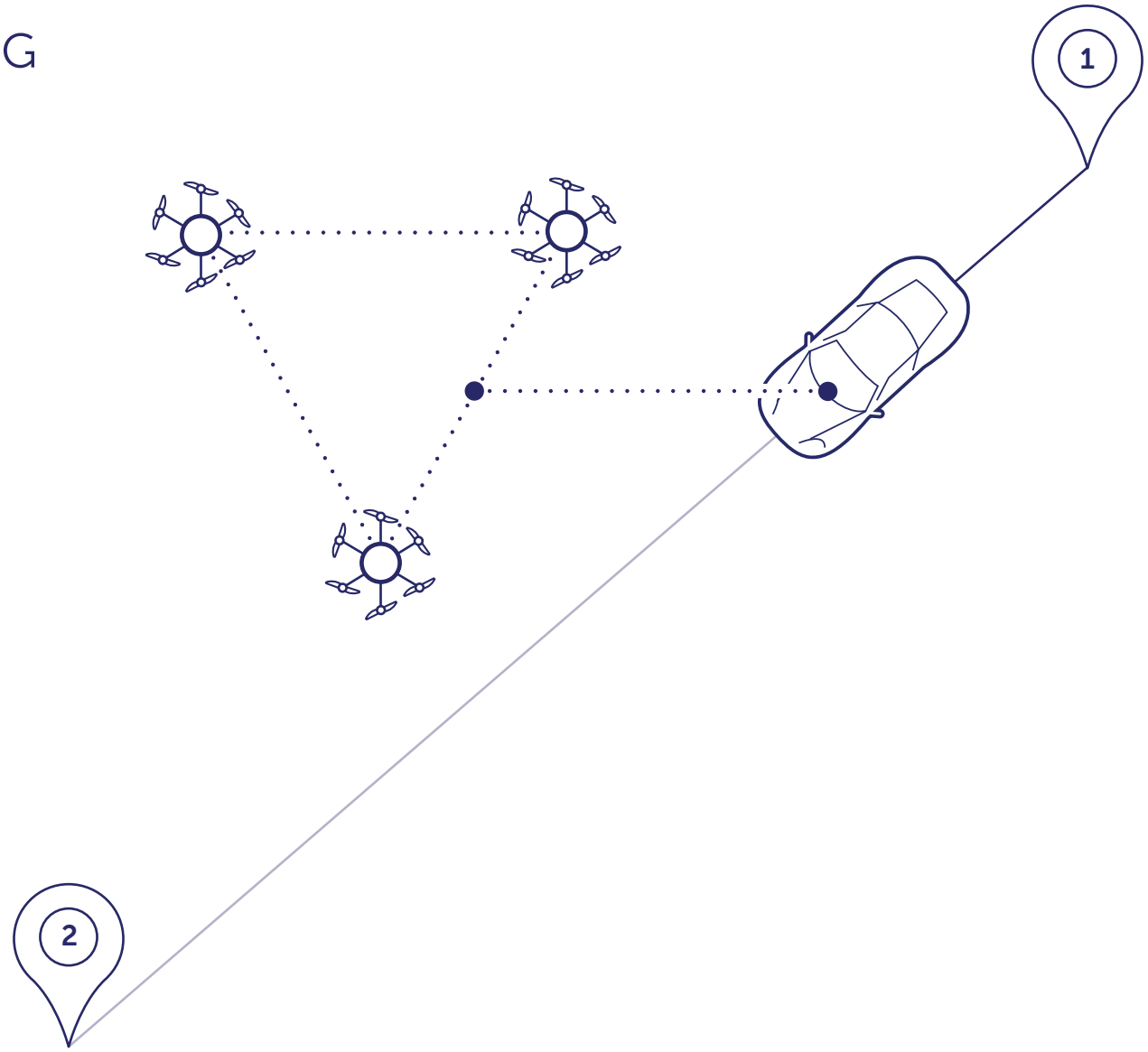
NEW INNOVATIONS: ROVER

Until now, swarms of drones would only respond to a ‘master’ drone in the air. Our new ‘Rover’ technology allows a swarm of drones to be responsive to a subject on the ground while remaining in formation.



NEW INNOVATIONS: RESPONSIVE WAYPOINTING

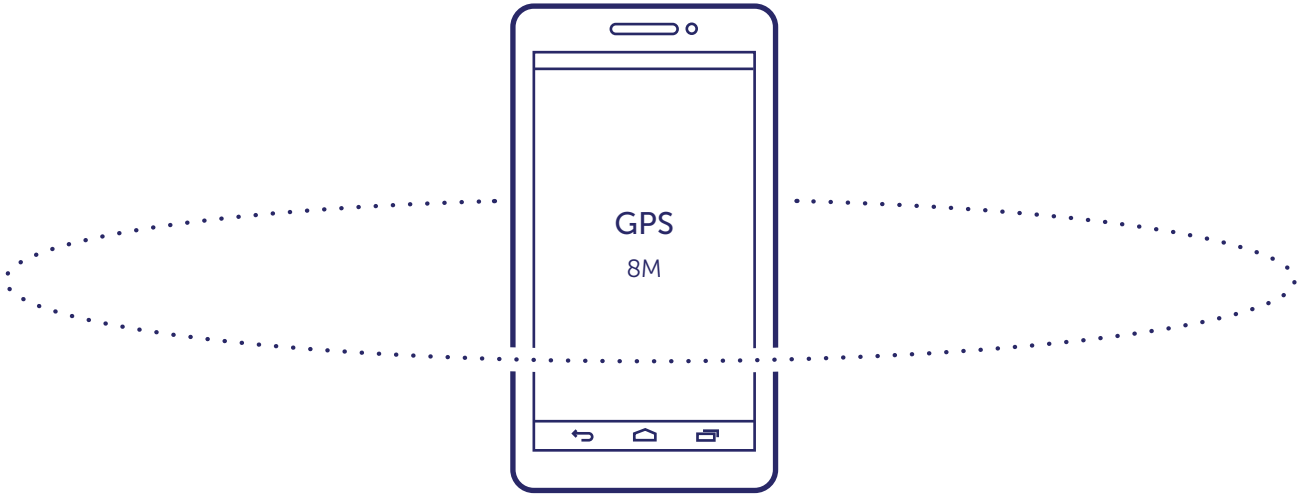
Currently drones carry out automated missions along a series of waypoints. Our new technology allows a ground subject to ‘push’ or ‘pull’ a swarm of drones along a way-pointed path based on a user’s movement on the ground.

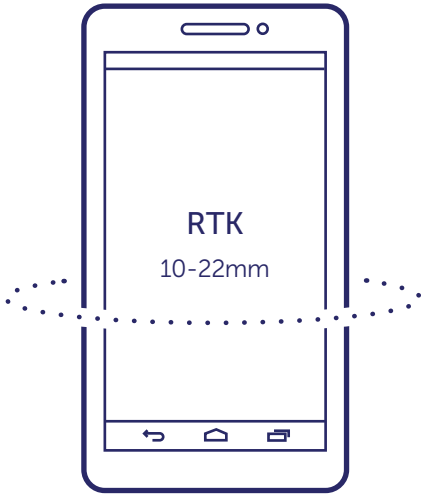


NEW INNOVATIONS: REAL-TIME KINETICS

Smartphone GPS units are accurate to roughly an 8m radius. To achieve greater precision, Fleetlights incorporates RTK Reach Units increasing accuracy to 10-20mm.

This technology is currently only used for military applications. However, future smartphone technology will achieve this accuracy without this additional unit.

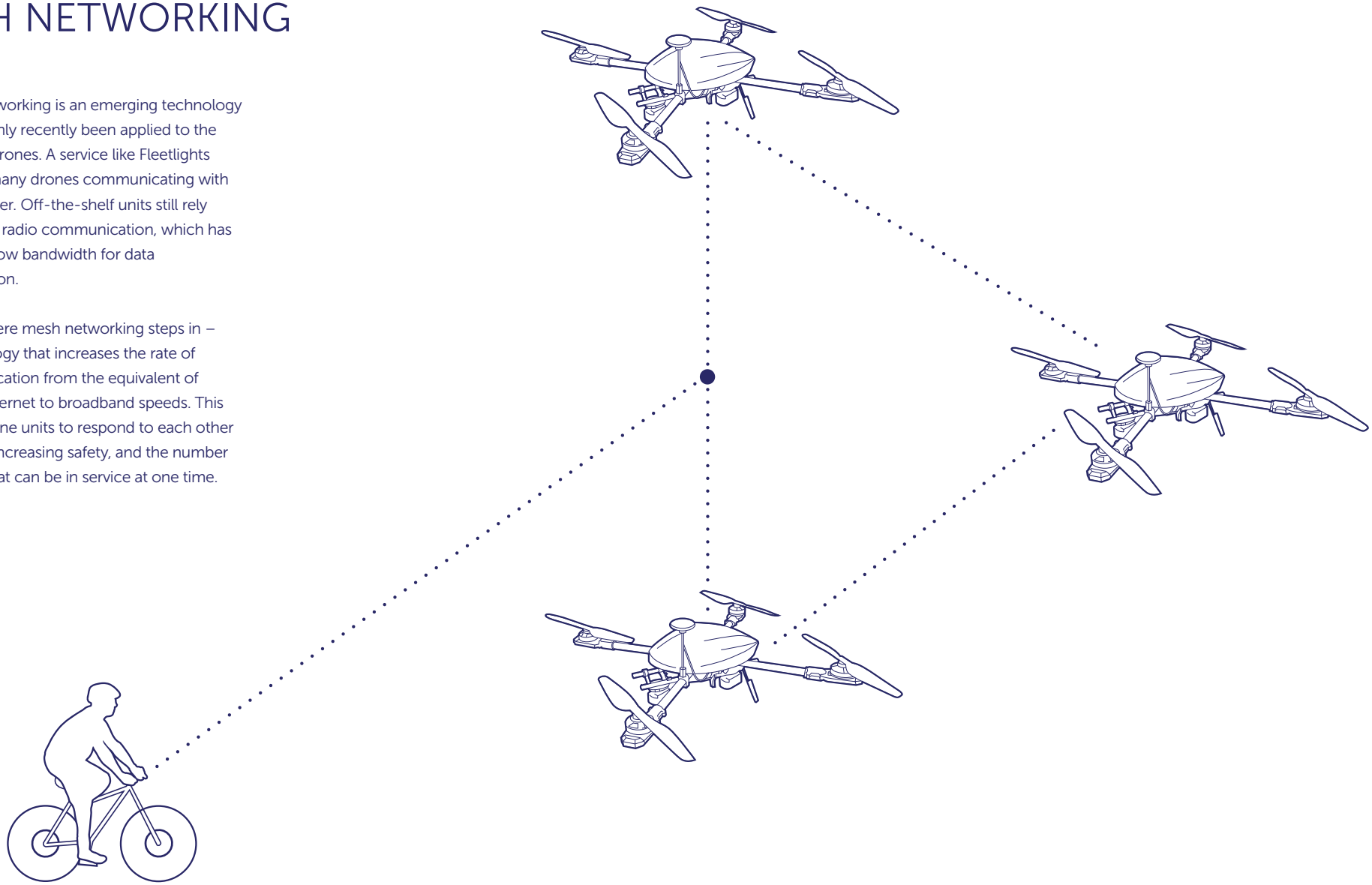




NEW INNOVATIONS: MESH NETWORKING

Mesh Networking is an emerging technology that has only recently been applied to the world of drones. A service like Fleetlights requires many drones communicating with one another. Off-the-shelf units still rely heavily on radio communication, which has relatively low bandwidth for data transmission.

This is where mesh networking steps in – a technology that increases the rate of communication from the equivalent of dial-up internet to broadband speeds. This allows drone units to respond to each other instantly, increasing safety, and the number of units that can be in service at one time.



DIRECT LINE &
THE FUTURE OF FLEETLIGHTS

Fleetlights is a beta service, with the ultimate aim of improving road safety and human utility. The goal is simple – to stop problems before they happen. Further developments are underway to make the service a reality:

1. Advanced Collision Detection would allow Fleetlights to be aware of their surroundings, removing the need for waypoint mapping.

2. Blue Cell (Hydrogen Power Units) rather than restrictive Lithium Batteries would increase the flight time of the Fleet exponentially.

3. Civil Aviation Authority Legislation is still in its infancy when it comes to UAVs. No concrete guidelines have been set down when it comes to drone operation as a commercial service.

4. Fleetlights technology has been made available as an open source project to allow the entire dev community to introduce the new advancements needed to make the service a reality.

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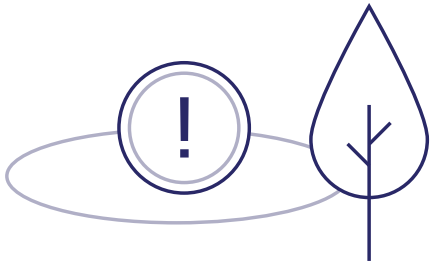

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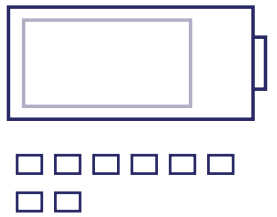

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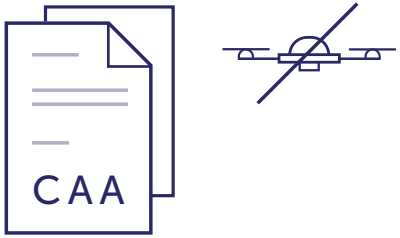

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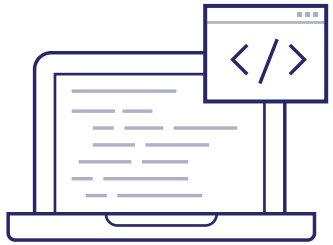


FLEETLIGHTS
FROM
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