PRODUCT SPEC SHEET
HYDERABAD, INDIA

KRATH CONTROL MESH · KCM · TACTICAL MESH COMMUNICATION

A LIVE BATTLE-MAP IN EVERY SOLDIER'S HAND.

Encrypted positions, chat, markers and alerts over a self-healing radio mesh. No tower, no SIM, no satellite. Each node pairs with any Android device running ATAK, so a section shares one live map instead of voice alone.



~5–8 km
per relay hop, self-healing multi-hop mesh

<30 s
for a relay to join the mesh

3–5 s
between position updates, live on ATAK

24–36 h
battery, in an IP65 node under 180 g

- Zero infrastructure
- Self-healing mesh
- AES-256, end to end
- One map in ATAK
- No SIM, airtime or subscription
- Designed and built in India

Technology readiness: TRL 6, prototype demonstrated in the field. Figures are from prototype testing and may change as trials progress.

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SPECIFICATIONS

Network	
Topology	Self-healing, multi-hop LoRa mesh; no infrastructure
Range	~5–8 km per relay hop
Relay join	Under 30 s
RF output	1 W
Security	
Encryption	AES-256, end to end, with PKI
Supply chain	China-free; non-Chinese, dual-sourced imported parts
Data and positioning	
Traffic	Positions, chat, markers and alerts
Position updates	Every 3–5 s
Positioning	GNSS with NavIC
Hardware	
Weight	Under 180 g
Battery life	24–36 h
Ingress	IP65
Phone link	Bluetooth Low Energy
Made in India	PCB and assembly, enclosure, antenna, battery pack, software
Software	
Map	ATAK, with the Krathveil plugin
Field app	Krathveil field console for Android, over BLE
Firmware	Field-flashable; over-the-air updates on the roadmap

HOW DATA TRAVELS

01 **ATAK event**
A position, marker or chat message on the phone

02 **Compress**
Packed into a compact TAK packet

03 **Bluetooth to the node**
From the phone to its paired radio

04 **Across the mesh**
Encrypted, hopping node to node

05 **Onto every map**
Decoded by each peer and shown in ATAK

WORKS WITH WHAT IS ALREADY ISSUED

- **Native ATAK / TAK**, on issued Android devices
- **Alongside voice radios**, not instead of them
- **No changes to existing systems:** an add-on node with clip-on mounts
- **Procurement is node and antenna only;** no new phones or infrastructure
- **Update, not re-buy:** new capability arrives as firmware
- **HQ gateway** brings the mesh picture back to command

IN DEVELOPMENT

- **Airborne and mast relay** · TRL 4–5
- **Sensors and effectors on the mesh** · TRL 3–4
- **Full MANET**
- **Qualification:** MIL-STD-810, MIL-STD-461, IP67/68

Krath Control Mesh is a Krathveil Private Limited product, designed and built in India.
Specifications are indicative and may change without notice.

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