

SINGULARITY COMMUNICATION PLATFORM



WAYREN

Software Defined Networking Platform that enables ad-hoc deployment of resilient C4ISTAR networks.

Ensures a Common Operational Picture

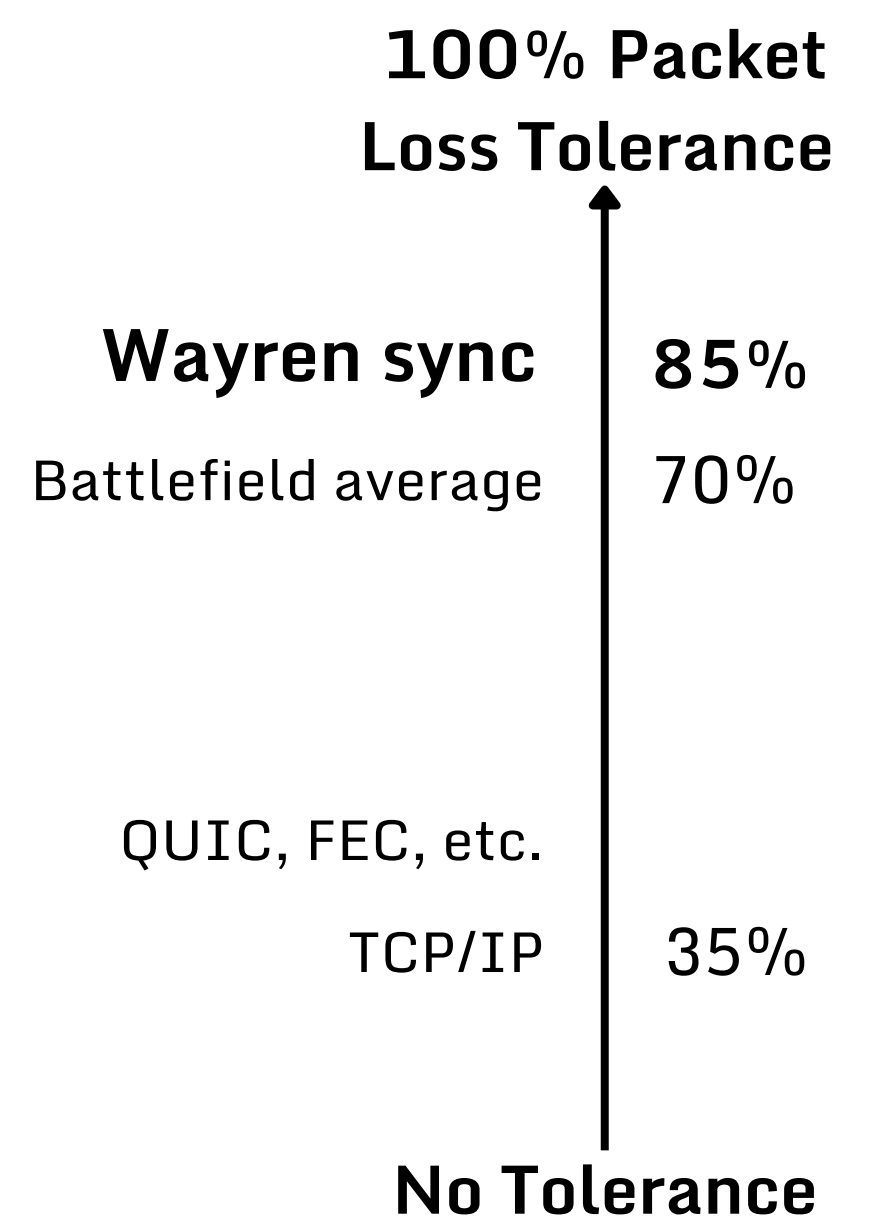
Increases situational awareness, operational efficiency and survivability by ensuring data exchange in degraded environments. The Platform synchronises data in a peer-to-peer manner, concurrently utilising hybrid networks such as existing radios, internet, satellite and others.

Efficient and resilient

Data sync is resilient to bandwidth limitations and disruptions, being able to operate with more than 85% packet loss. Offline nodes will receive old messages when they come back online and lost messages will be automatically retransmitted.

Runs on any device and C2 system

Runs on phones, tablets, laptops and servers. Connecting everything together using our App, TAK plugin or integrated into mission systems. Integrates existing radios, trackers and laser range finders.



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WAYREN TACTICAL COMMAND KIT



A comprehensive kit for **ensuring squad/company situational awareness and command & control**. Built on the Wayren's resilient communication platform, integrated with CivTAK.

Key Benefits

- **An complete solution** - Provides blue force tracking, messaging and graphics for ensuring command & control and situational awareness.
- **Works where others don't** - Stays operational in demanding conditions with Wayren's data-loss tolerant peer-to-peer sync and Himeras's resilient radios.
- **Rapid ad-hoc deployment** - Built to be deployed ad-hoc with the included radios, without a server. The network builds itself in minutes after the kit is set up.
- **Ensures a Common Operational Picture** - Extends various existing networks such as MANET, LTE and Satellite to enable rapid decision-making and efficient C2.

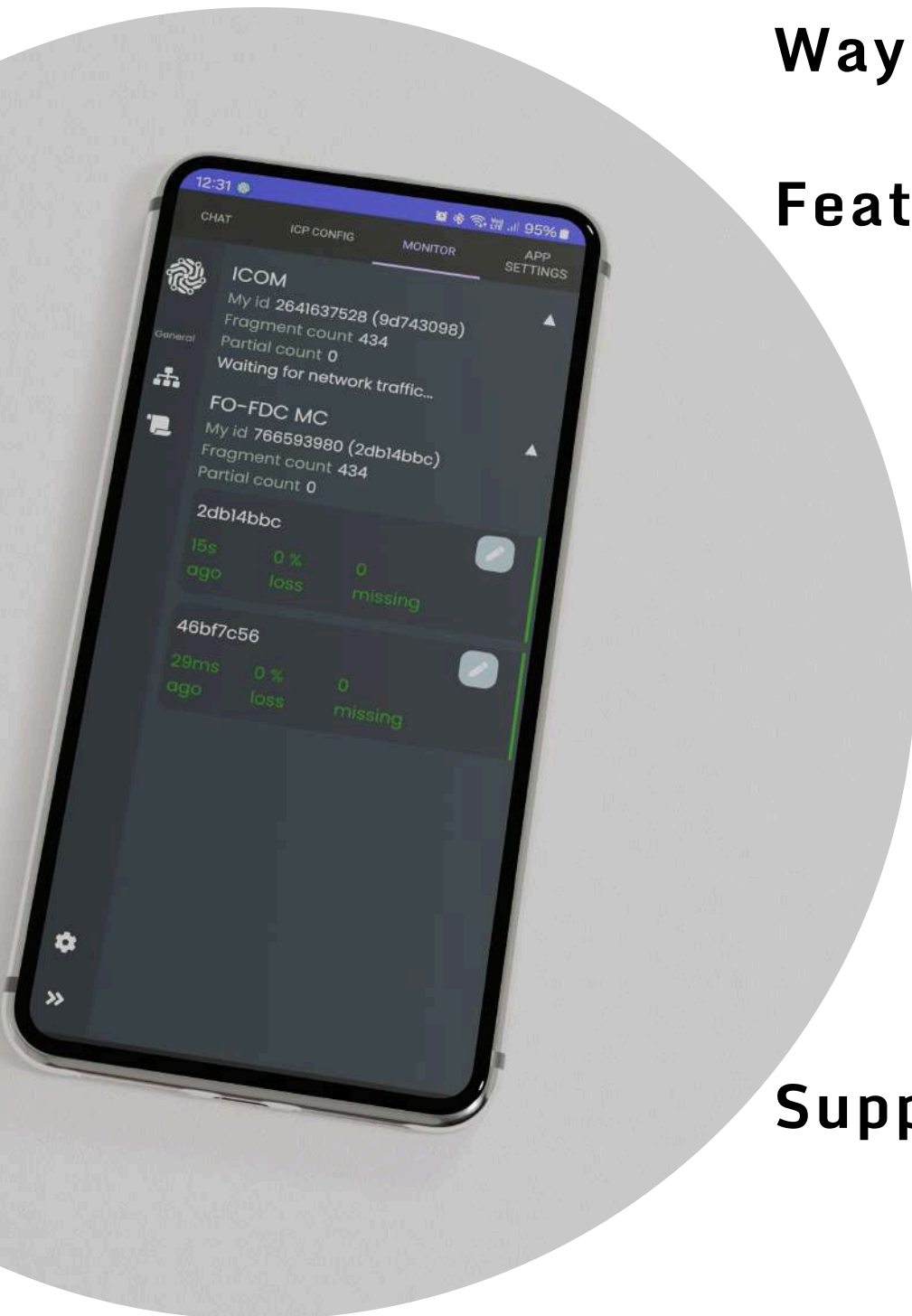
Description

- **1x Transport case** - For secure transportation and storage of the kit.
- **1x Samsung Galaxy Tab Active5 (or similar Android tablet)** - Command unit device with a Juggernaut case and data/charging cable.
- **14x Samsung Galaxy XCover7 (or similar Android smartphone)** - Unit device with a Juggernaut case, vest mount, and data/charging cable.
- **15x Himeras G1 PRO (or as specified)** - Digital handheld radios.
- **4x Himeras B1 Repeaters** - Himeras radio repeaters.
- **15x Wayren Singularity licenses** - Software designed for deployment of reliable hybrid mesh networks.
- **15x Wayren CivTAK plugin licenses** - Integration of Wayren Singularity with CivTAK.
- **1x Wayren HUBs** - Power and data interface between devices. Includes USB cable and Ethernet adapter.

* devices and quantities can be customized based on client request



PRODUCT SPECIFICATION



Wayren Singularity

Features

Supported radios

Specification

- Platform for distributed hybrid mesh networks
- Data synchronization that is resilient to bandwidth limitations and communication disruptions.
- Virtual channels for restricting data to certain network segments
- Wayren Chat, Network Monitor, Configurator
- voice messa
- OTA Updates
- IP networks and radios
- Analogue radios with headset capability (requires Wayren Hub)
- Radios with serial data (Wired or Bluetooth)
- Tested: L3Harris 7850M, ICOM iDAS (IC-F3XXD), Baofeng UV-5R, Himeria G1 Pro
- Other radio integrations available on request

Digital Waveform for analog channel

1kbps with error correction and channel equalization

Supported platforms

Windows, Linux and Android

Supported applications

- CivTAK (with plugin)
- TOORU
- MIMS
- SDK for integrating other apps

Encryption method

ChaCha20 with 256-bit cipher, other methods available on request

PRODUCT SPECIFICATION



Wayren Hub

Specification

Features

- Interface for different radios and equipment such as laser range finders. Wired or Bluetooth connection with end user device.
- Bridge between multiple radios into one data network including digitalising analogue radios.

I/O

- Bluetooth
- 4 circular metal connectors with caps
 - USB
 - 2x RS232, Analogue*
 - Ethernet
- * Two combined analogue/digital ports

Power delivery

- 81Wh rechargeable battery
- Can operate as a power bank
- Up to one month of charge
- Power button with battery level indicator

Enclosure

- Aluminium with IP67 protection
- 13 x 10 x 5 cm, 960g
- MIL-STD-810

Cables

- 1x USB Type C or A
- Others as specified



PRODUCT SPECIFICATION



CivATAK plugin Specification

Description

Wayren CivATAK plugin provides integration with Singularity capabilities. Enables CivTAK decentralised operation and data synchronization over hybrid networks.

Features

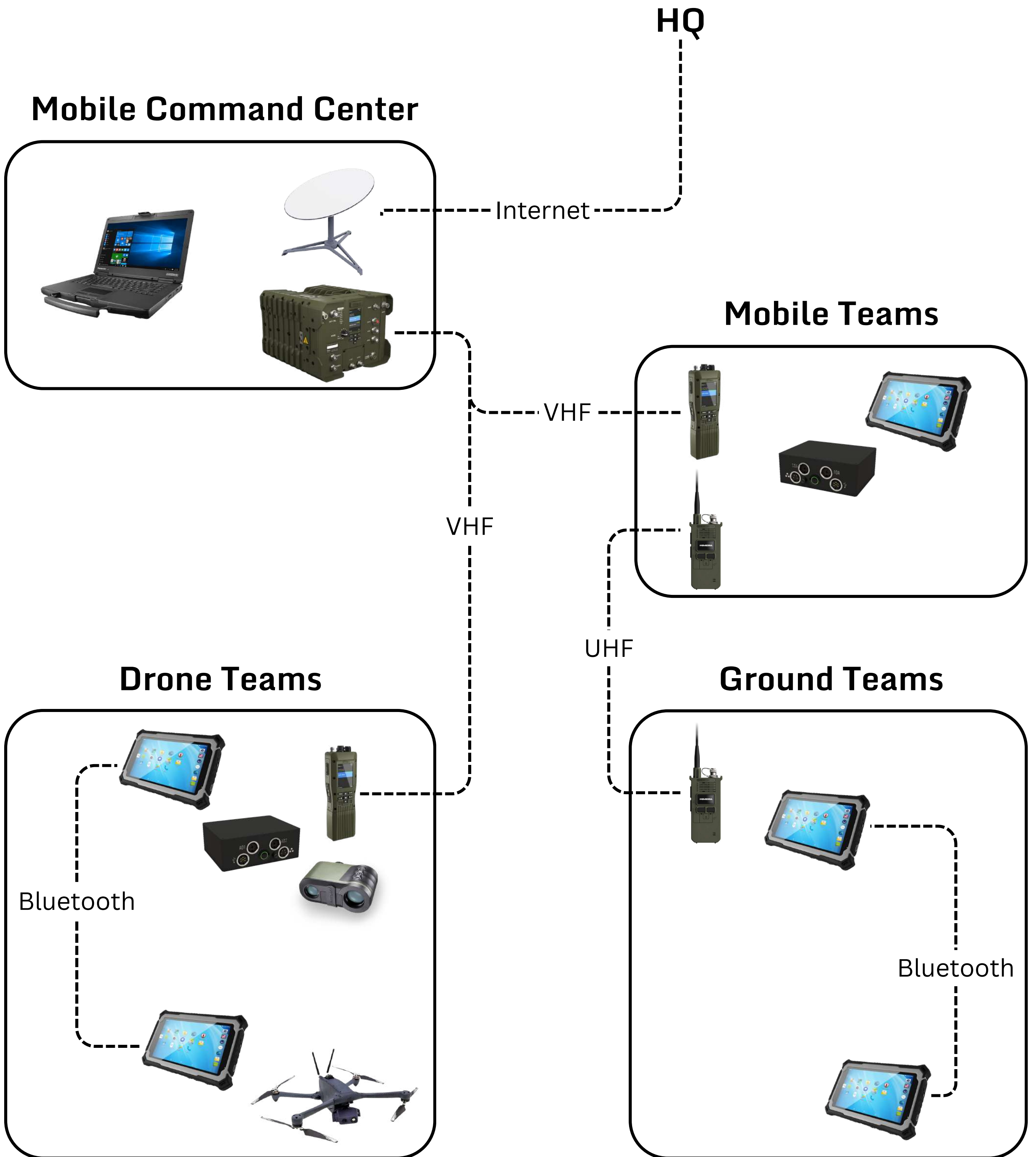
- Integrates Singularity capabilities
- GPS from EUD or radio
- Hybrid-mesh mode
- No TAK server needed
- Pre-made configurations
- Data filtering based on groups and channels
- Works with common VPN providers (Zerotier) and self-hosted environments (OpenVPN)

Planned

- TAK server support



EXAMPLE C2 NETWORK



EXAMPLE HUB USE-CASES



Soldier Equipment Hub



Network Data Bridge

