COMMUNICATION CHAIN OF THE EXTENDED MESH NETWORK

Sovereign Systems

COMMUNICATION CHAIN

THE LOCAL MESH NETWORK IS USUALLY THE MAIN FORM OF COMMUNICATIONS, BUT THE MESH SOLUTION HAS BENEFITS FOR EXTRA FUNCTIONALITY, WITH THE ADDITION OF EXTRA EQUIPMENT PROVIDING A FULL LEVEL OF COMMUNICATIONS - OUTSIDE THE MESH NETWORK ITSELF.

ADDING A CELLULAR MODEM (OR SATCOM) TO THE MESH CHAIN WILL GIVE CELLULAR ACCESS TOWIFI DEVICES CONNECTED TO ALL THE RADIOS IN THE MESH NETWORK.
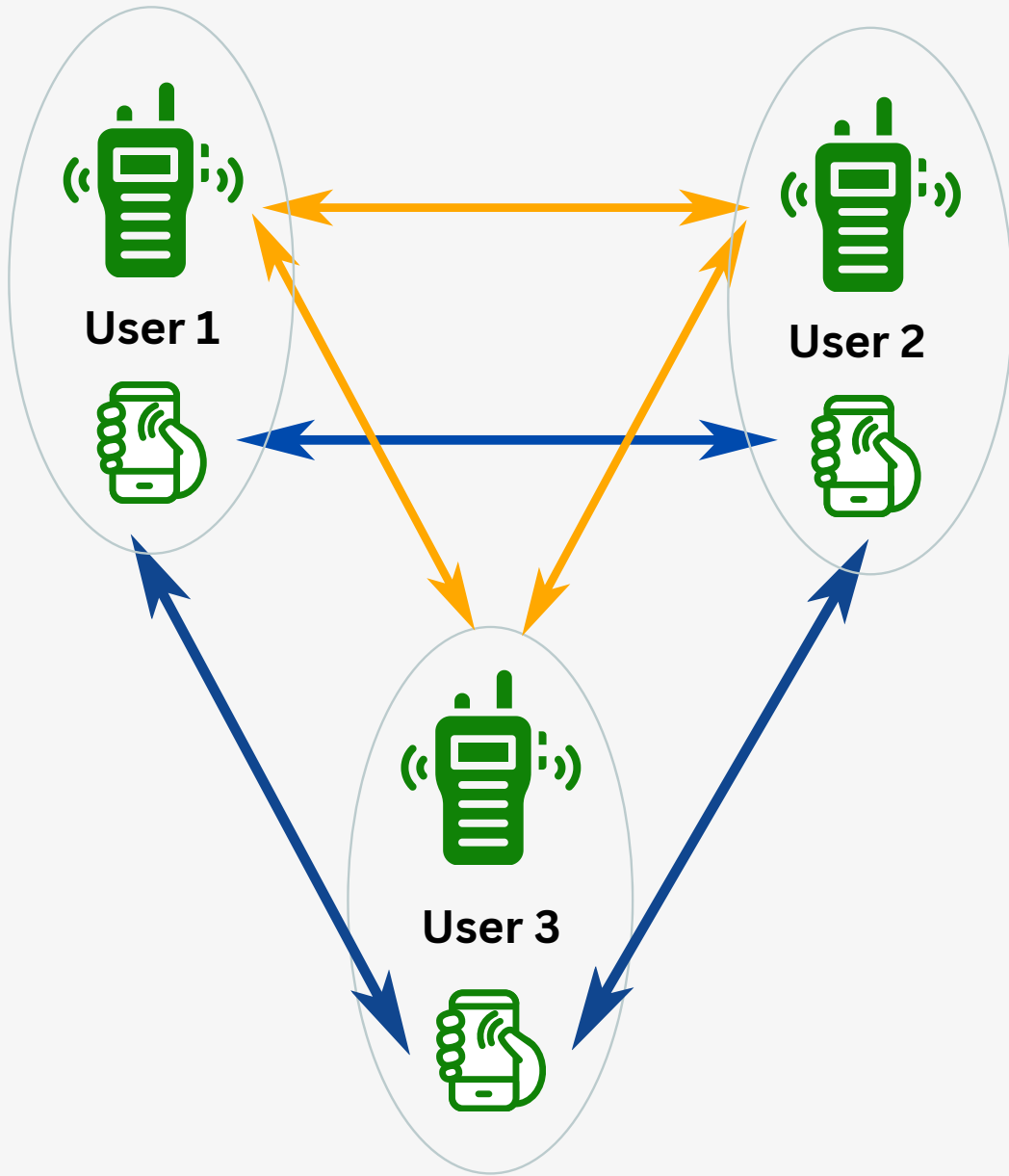
OVERVIEW

The extended mesh solution includes the following:

- Mesh Radio (with WiFi access points)
- Smart phone (to connect to the the mesh radio)
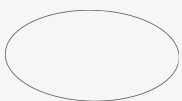- MBK (cellular modem to connect to cellular network)

LOCAL WIFI NETWORK VIA MESH

User 1

User 2

User 3

Standard mesh network communications between radios themselves
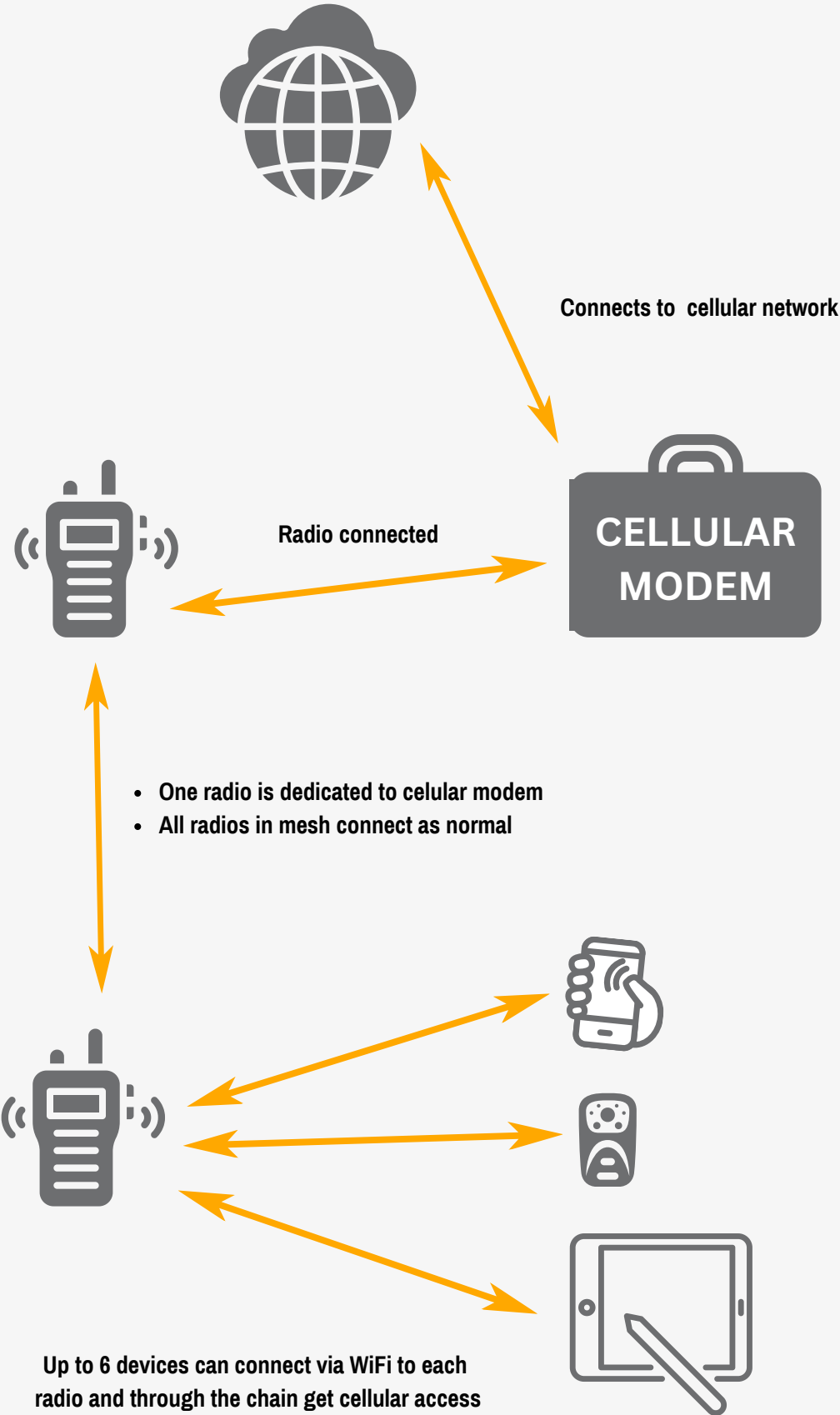
Communications between smartphones, tablets etc

WiFi connection

CELLULAR ACCESS FOR WIFI DEVICES
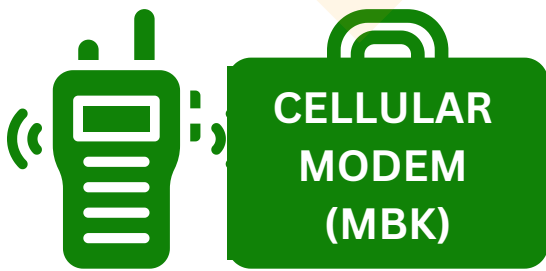
Connects to cellular network

CELLULAR MODEM

Radio connected

- One radio is dedicated to celular modem
- All radios in mesh connect as normal

Up to 6 devices can connect via WiFi to each
radio and through the chain get cellular access

EXTENDED COMMUNICATION CHAIN SAMPLE

CELLULAR NETWORK

The modem with activated SIM card will give access to the cellular network.

MBK + MESH RADIO

A radio is connected to the MBK via ethernet cable. This will enable the other radios in the mesh network to give cellular network access to devices such as smartphones, tablets etc.

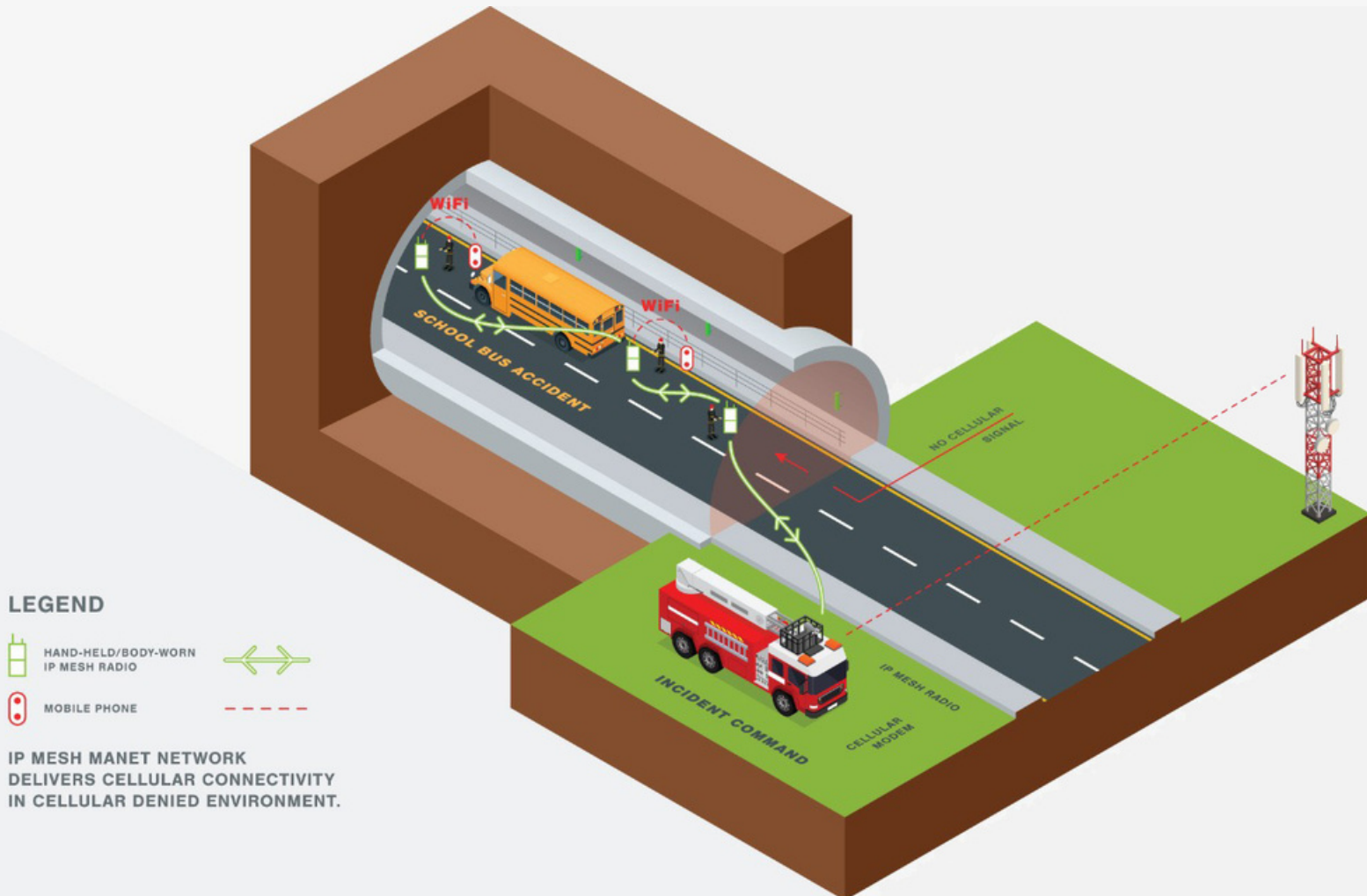Satcom can add to or replace cellular modem.

CELLULAR MODEM (MBK)

MESH RADIOS

All radios that are in range, communicate with each other, including radio attached to MBK. Up to 6 devices can connect to each radios WiFi.

User 1   **User 2**   **User 3**

SMARTPHONE (OR ANY WiFi DEVICE)

Once the smartphone is connected to the troops radio (and on to the commander radio and MBK via the mesh) apps can get access to the cellular network via this communication chain such as:
- Situational Awareness (TAK, Airbox etc.)
- PTT app (this can enable cross team comms if required)

CELLULAR ACCESS FOR DEVICES IN CELLULAR DENIED ENVIRONMENT

LEGEND

- HAND-HELD/BODY-WORN IP MESH RADIO
- MOBILE PHONE

IP MESH MANET NETWORK DELIVERS CELLULAR CONNECTIVITY IN CELLULAR DENIED ENVIRONMENT.

Mesh radio connected to cellular modem on the exterior - in this example the command vehicle outside the entrance of the tunnel. The exterior radio connects to the other radios in the tunnel (cellular denied), thus giving cellular access to devices connected to each radio.

- Distances between radios just for illustration.
- Satcom can also be added for instances where cellular not available.

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