

# Welcome



# *Thermoteknix*

Teknix House | Cambridge | UK

# **Dr. Richard Salisbury**

## **Managing Director**

Welcome to London

- **Richard Hames**  
Sales Director: Asia
- **Jonti Salisbury**  
Sales Manager: UK, Scandinavia & Israel
- **Andrew Morris**  
Sales Manager: Europe, Canada & Africa
- **Daniele Di Luna**  
Sales Manager: Italy, Eastern Europe, Mexico, Central & South America
- **Ally Lawson**  
Sales Manager: UK MOD, Middle East, Pakistan, India & Turkey
- **Alistair Brown**  
Product Manager

- 17:30 - 17:40 Richard Salisbury  
**Welcome DSEI 2019**
- 17:40 - 18:00 Alistair Brown  
**New Products, ClipIR-XD & CoVid**
- 18:00 - 18:10 Andrew Morris  
**TiCAM 1000C, new features**
- 18:10 - 18:30 Matias Slagt - Bravo 20  
**FuseIR success in Netherlands**
- 18:30 - 18:45 Ally Lawson  
**ConnectIR Demonstration**

# **Food & Drink in the upstairs lounge**



Stand S2-315

## **New Products**

**Alistair Brown**  
**Product Manager**

# ClipIR XD-E

# ClipIR XD-B

ClipIR Extended Distance





**Market demands:**

- Battery-less option XD-E (Helmet as a system)
- Maintains 40 degree Field of View (FoV)
- Extended distance (350m Vs 580m)
- Video Input (Analogue)
- Integrated Compass (Navigation)
- Backward compatibility with existing mounts





- ClipIR XD - B
  - XD = Extended Distance
  - B = Integral Battery
- 640 x 480 - 60Hz

**Product Matrix:**

- Continue to offer current ClipIR (Entry level)
- ClipIR XD-E External power
- ClipIR XD-B self-powered (Battery)



# CoVid<sup>®</sup>

Covert Video HUD for Video Data Display into NVG

- New Product From Thermoteknix
- Lightweight Covert Video Head Up Display





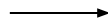
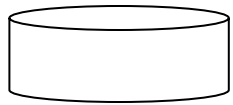
The Problem:  
Lots of data... How to view it?



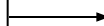
# Is Augmented Reality (AR) the solution?



Battle Management Software  
Database



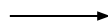
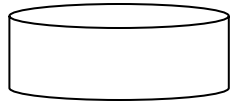
Battlefield  
Communication



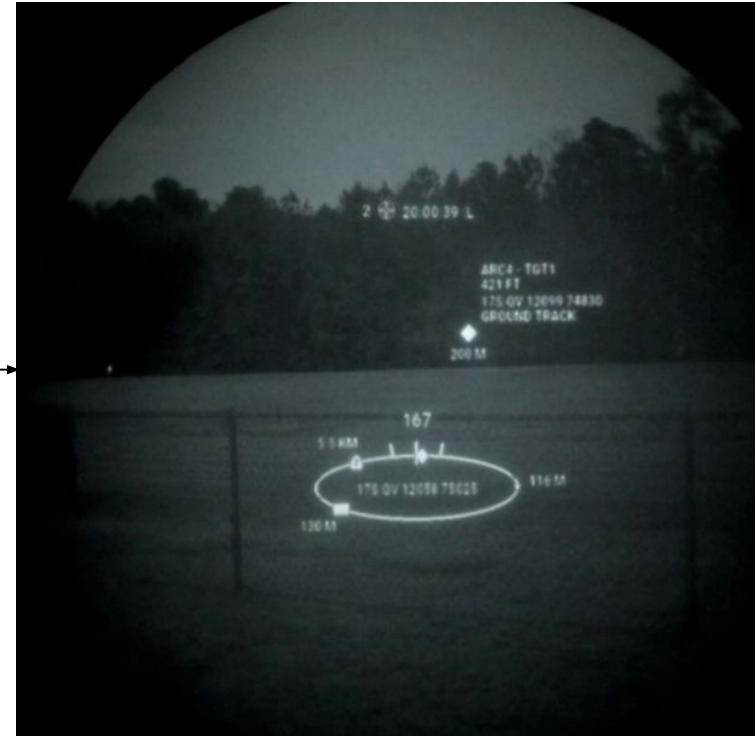
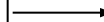
Conventional  
Heads-down  
2D  
“helicopter view”

Common Operational Picture  
(COP)

Battle Management Software  
Database



Battlefield  
Communication



AR  
“Heads-Up”  
3D  
“Head centric”



 **ARA**

Home

### ARC4: Heads-Up Situational Awareness




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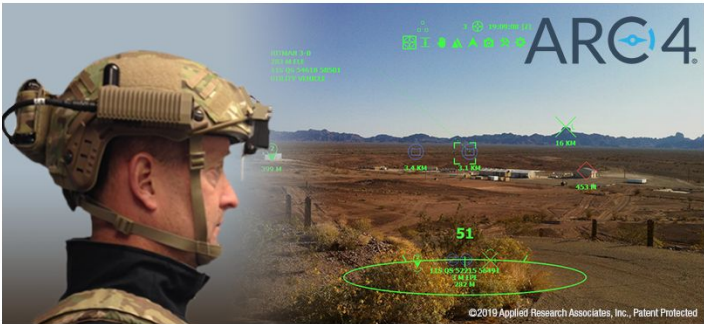
**Challenge**

Traditional wearable information systems require personnel to look down at maps or smartphone devices to access geo-spatial information. In so doing, their head is 'down' and their attention is drawn away from what is happening directly in front of them. ARC4 enables the user to acquire time-critical geo-spatial information with their 'head-up' and 'eyes-out' on the environment.

**Dave Roberts**  
ARC4 Product Manager  
Tel: 919-582-3300  
Map  
EMAIL US

ARC4 is advanced augmented reality technology for outdoor on-the-move applications. ARC4 users see geo-registered icons overlaid on their real-world view.



 [ARC4 RECON Product Sheet](#)

**LOCATIONS**

- US Based Company
- Augmented Reality for C4, Also known as ARC4
- Static and dynamic data
- Links to ATAK (Android Tactical Assault Kit)

- ARC4 Augmented Reality device
- Launch Customer for CoVid
- In Partnership with Thermoteknix



# ARC4<sup>®</sup>

## Heads-Up Situational Awareness

ARC4 Module

+

Thermoteknix COVID

+

I<sup>2</sup> Night Vision Goggle





Day HUD  
Large and cumbersome  
No night capability



### Why now?

- Increased maturity of Augmented Reality (AR)
- Increased Bandwidth Available (Data radio)
- Customer demand (ARA)
- Market gap analysis



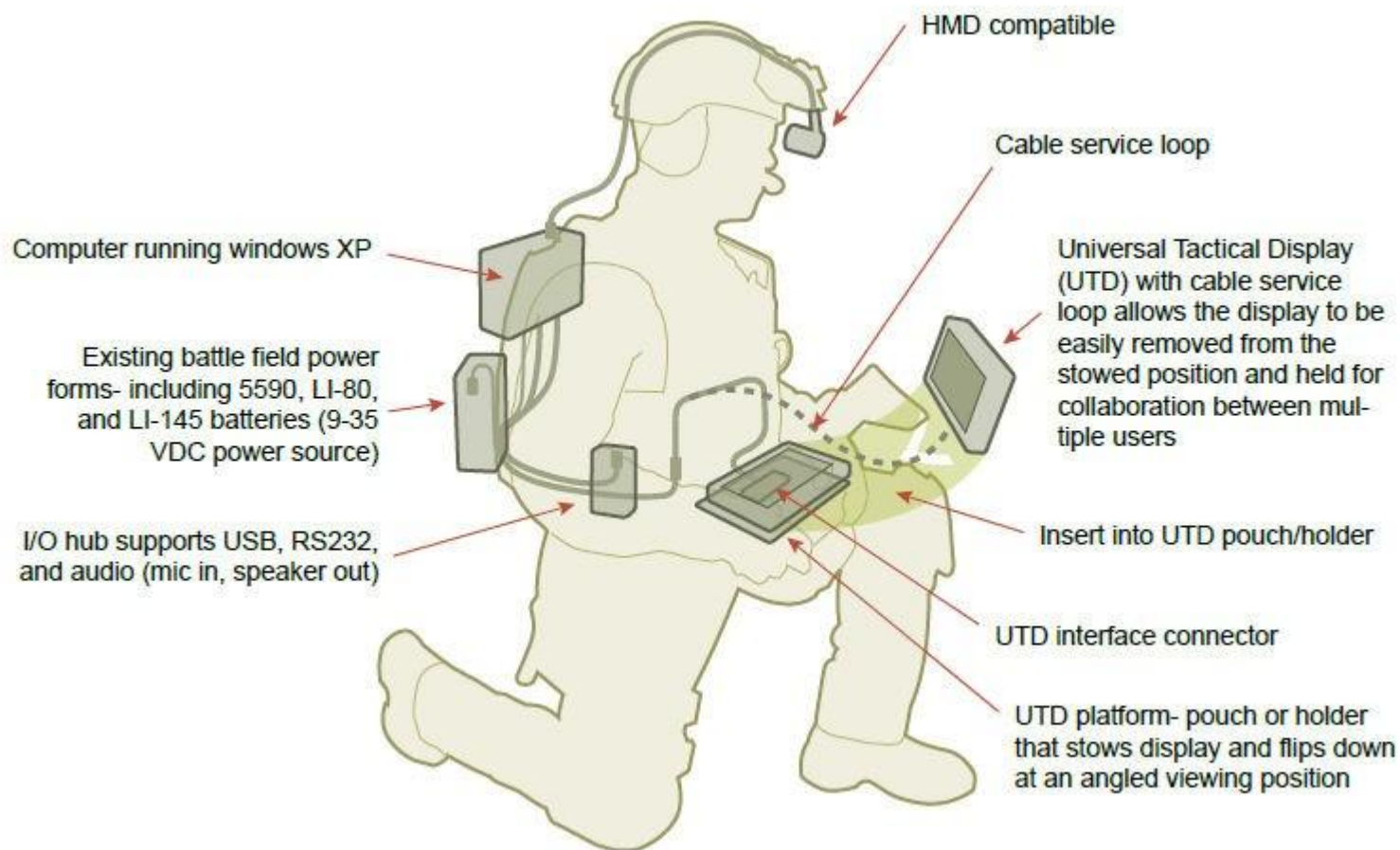
- Covert Video Display
- Less than 50g
- Composite video input
- External power
- Minimal helmet burden





Target Markets:

- Special forces
- AR suppliers
- Navigation suppliers
- System integrators
- Future Soldier systems
- Mission Planning (Waypoints)





# TiCAM<sup>®</sup> 1000C



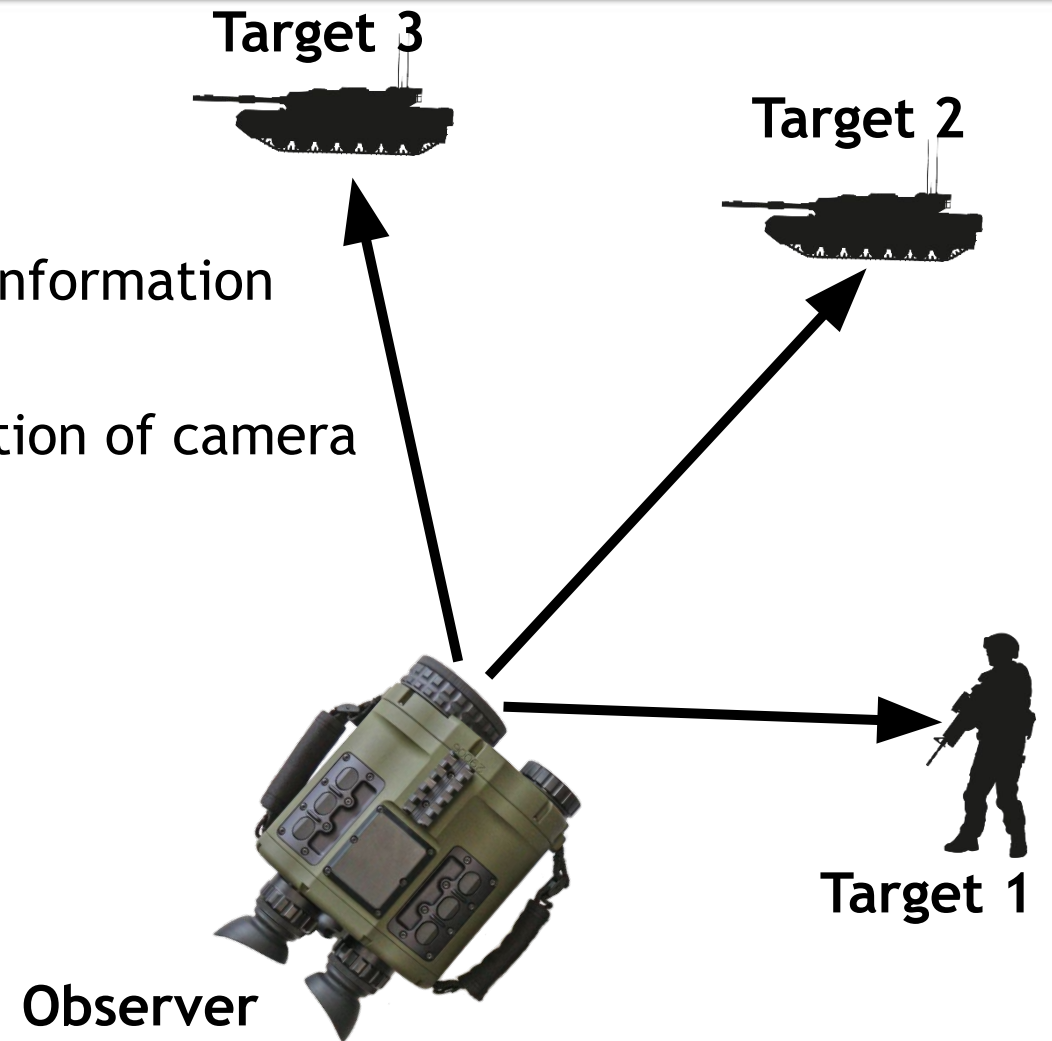
Andrew Morris

TiCAM 1000C New features:

1. Triangulation (distance and bearing between two targets)
2. TiCAM 1000C-100 (100mm lens)
3. ConnectIR (More later)

**Standard LRF mode: Single target**

- Single or repeated LRF fire to capture target information
- Observer GPS co-ordinates, bearing and elevation of camera
- Target GPS co-ordinates, bearing and distance
- Available in Visible CCD or IR modes

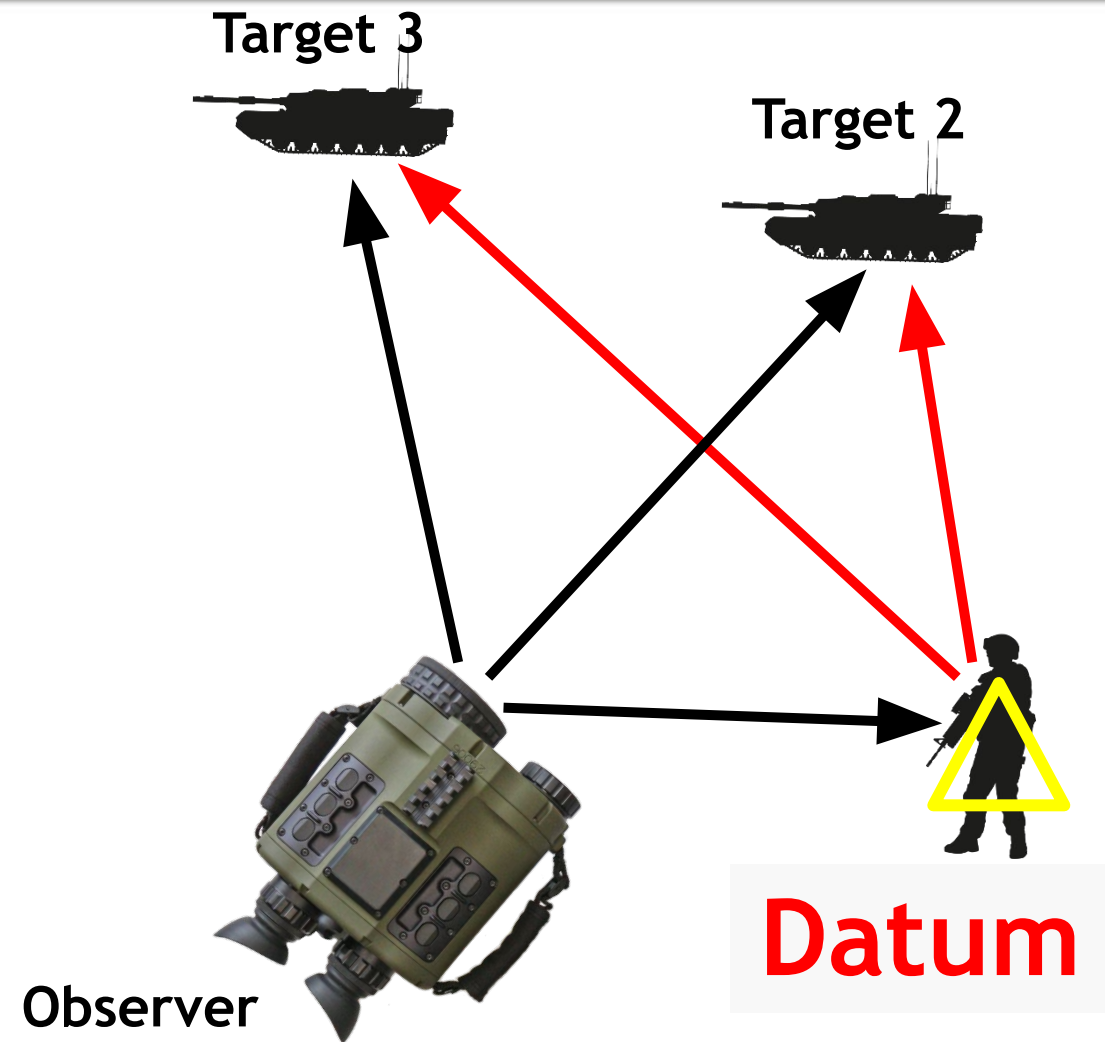


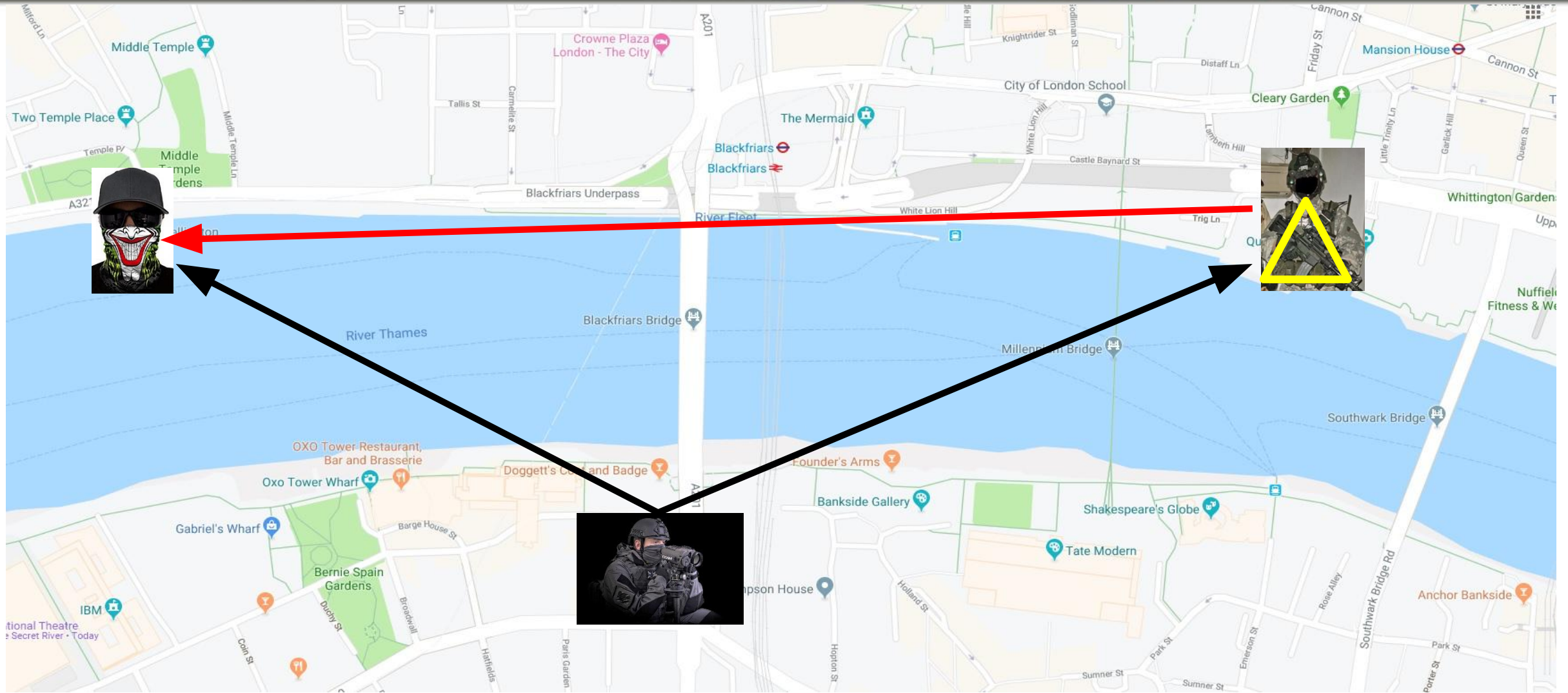
It is a method of designating a target as a reference “Datum” and then computing distance and bearing from that position to other targets.

Think of it as if there is an observer at the reference datum and he/she is giving distance and bearing from their location.

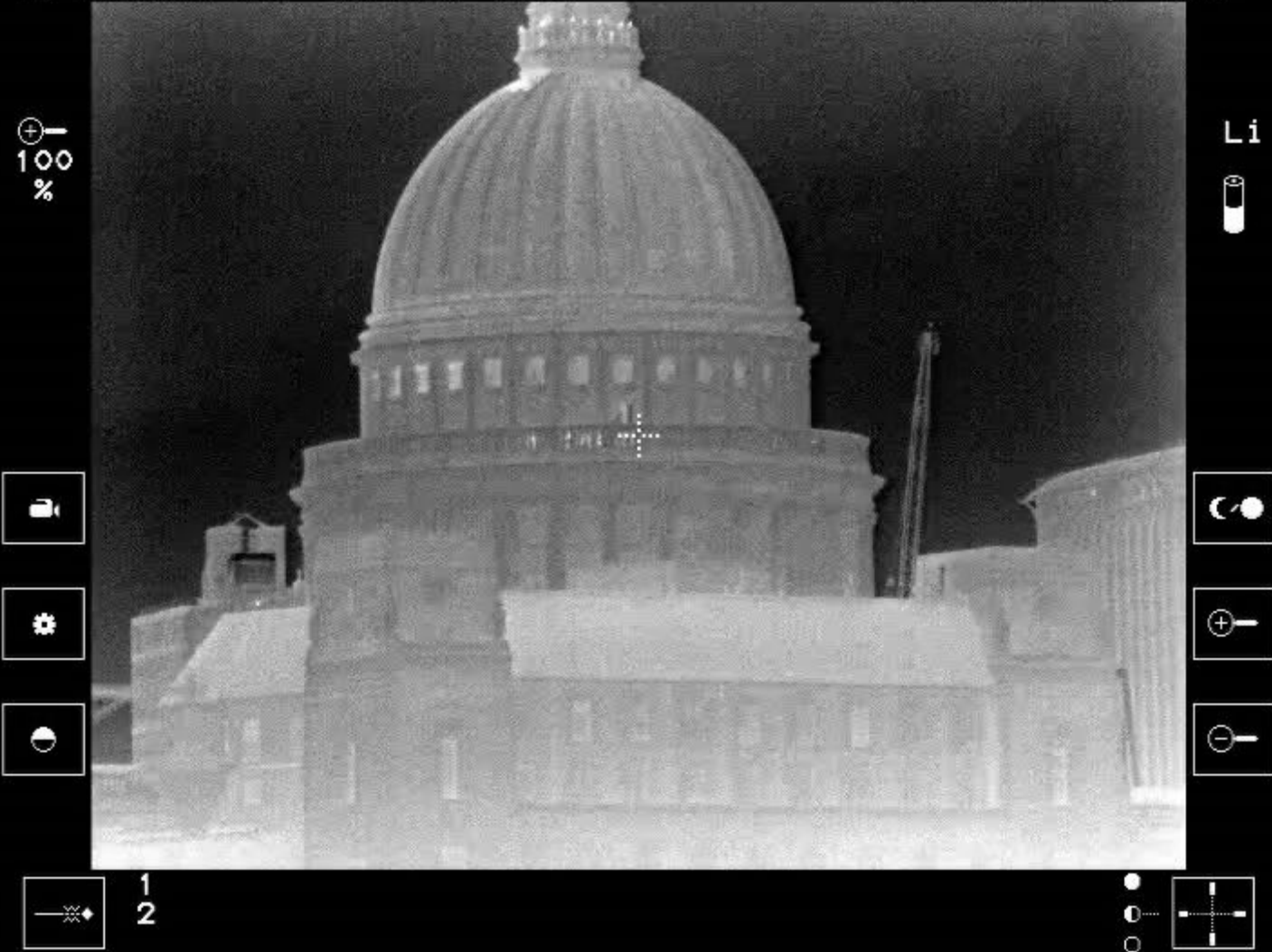
Applications

- Border Security / Coastguard
- Artillery / Mortars
- Fall of Shot / Friendly fire
- Anti terrorism
- Wildlife protection





TiCAM 1000C      15   20   25   30   35   40      15:08:04  
LT 51.5085 LG -0.1049 +++++      NNE 29.8° ↗ 4.6°  
09/09/2019



The central image shows a thermal camera view of a large domed building, likely a state capitol. The image is in grayscale with a grainy texture. A white crosshair is centered on the dome. The interface includes several control elements:

- Top Left:** A zoom control with a plus/minus icon and "100%" text.
- Top Right:** A battery icon labeled "Li".
- Left Side:** Three square buttons: a camera icon, a gear icon, and a circle icon.
- Right Side:** Three square buttons: a moon icon, a zoom-in icon, and a zoom-out icon.
- Bottom Left:** A square button with a crosshair and a "1/2" indicator.
- Bottom Right:** A square button with a crosshair and a "1/2" indicator.



# 100mm lens

Larger DRI / Smaller FoV

Spot the difference !

Larger DRI however smaller FoV

75mm Human detection 2,941m

HFoV 8.3 degrees

100mm Human detection 3,922m

HFoV 6.2 degrees







Dutch Police success with FuselR



# Introduction bravo twenty





# Management introduction



MATIAS SLAGT (1969)  
former cavalry officer rnlA (partly army reserves)  
20 years experience in defense industry  
Managing director bravo twenty  
Commercial Director embedded acoustics

Bravo twenty represents various companies and sells to the Netherlands armed forces and first responders. Focus is on soldier worn electronic, gear and equipment and power solution

Embedded acoustics is a cutting edge R&D company, supplying technology to the Netherlands armed forces and first responders



# Thermoteknix sales into The Netherlands

- Police - Netherlands has 1 national police force, divided into 10 regions.
- Small number of ClipIR and 6 FuseIRs to date sold into the police force.
- Mainly used for covert operations and surveillance.
- Positive Customer feedback: good image quality, robust, small, easy to use

*“I’ve used the FuseIR couple times already. And I must say I am very surprised by the quality! I really love it! The size of the FuseIR is a very big plus. I can take it with me almost every time.*

*“The FuseIR is a very robust and easy to use product.” - Martijn Coolen - Nationale Politie Oost*

*“In our company we use the FuseIR from your company. It’s a wonderful device. “*

*J.W. Heinrichs - Politie Limburg*

# Thermoteknix projects in Dutch military

## RNLMC

Extensive trials of ClipIR and FuserIR. Preferred system is the ClipIR as new NVGs have been procured recently. Procurement process has started

## RNLa

Evaluation of both ClipIR and FuserIR started this month.



# Conclusions

- Niche found in police surveillance units for FuserIR
- Upselling to existing ClipIR users possible
- Selling in small numbers avoids complex tender procedures
- Word of mouth important to “spread the word”
- Strong ClipIR opportunities still remain in many markets, often with non SF groups

# Connect**IR**

Android Software App for mobile target communication

Richard Salisbury - Managing Director

- Thermoteknix Android Phone or Tablet App
- Enhances TiCAM product
- Exploits TiCAM Connectivity
- Gives team collaboration and situation data
- Intelligence gathering & mission planning



Access to Cellular network

Wi-Fi

MANET radio

Near real-time communication

Thermal Image

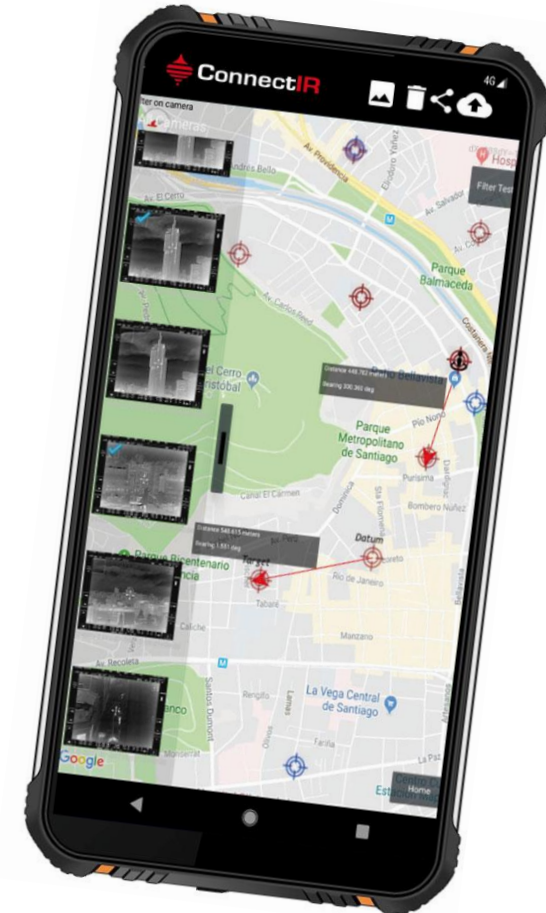
Visual Image

Location

Distance & Bearing

## Target Applications

- Police / Border force
- Drug/Anti-terror units / Hostage recovery
- Tactical mission planning
- Special forces
- Artillery support
- Disaster relief
- Search and Rescue
- Team Collaboration and Co-ordination

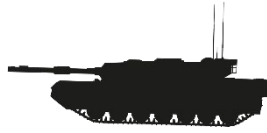


## ConnectIR Standard



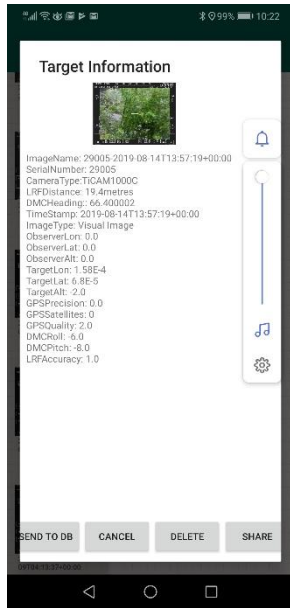
- Single image message
- Included with Camera
- Uses installed Apps WhatsApp / Email
- Manual “Send”
- Location via Google map
- Single map type

# ConnectIR Standard

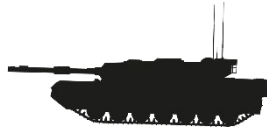


**Cellular Network  
Wi-Fi**

**WhatsApp message  
email**

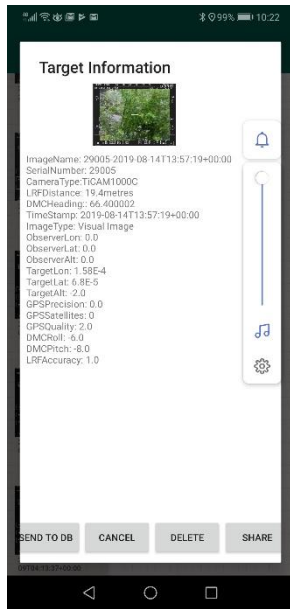


# ConnectIR Standard



**Cellular Network  
Wi-Fi**

**WhatsApp group**



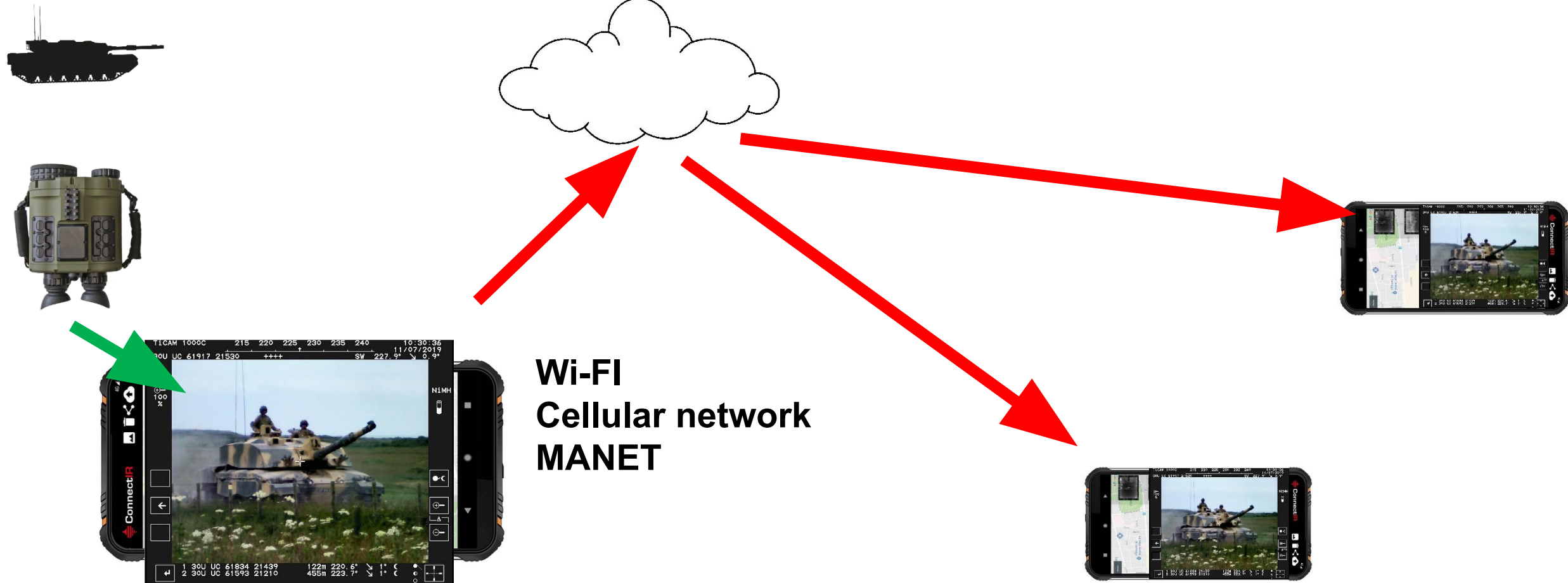
**WhatsApp message  
email**

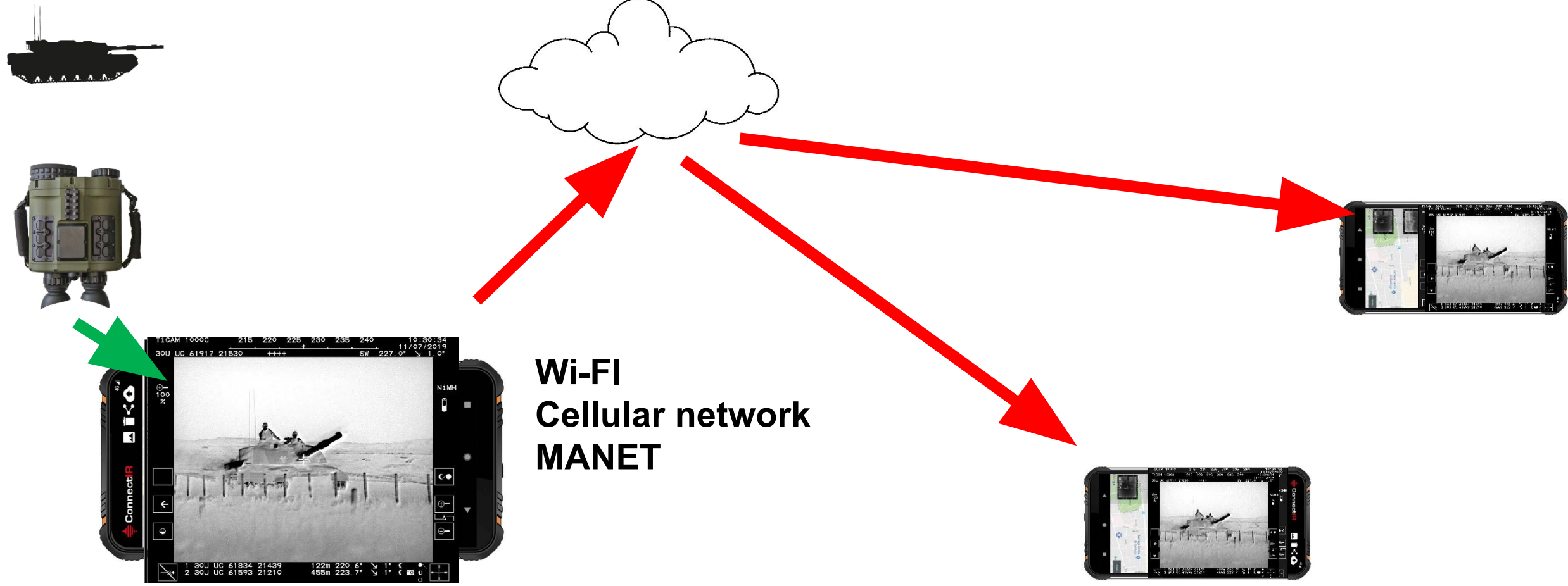






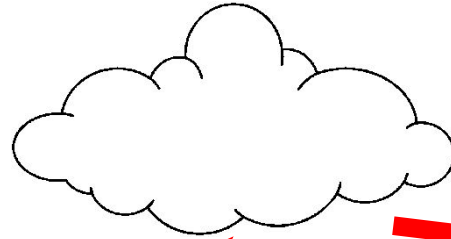
- Auto/Demand upload
- Live display on User devices
- Multi-image gallery sort filters
- Secure Cloud based storage
- Single or team/group viewer
- Triangulation on remote App
- Standard/Hybrid maps
- Sold per-camera licence supporting 15 devices







Secure cloud database

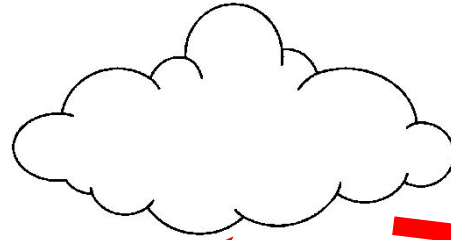


Wi-Fi  
Cellular network  
MANET





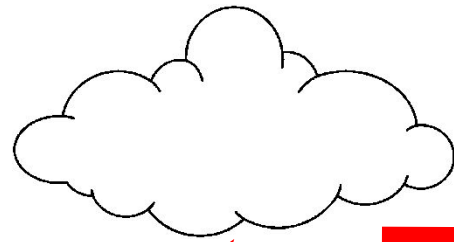
Secure cloud database



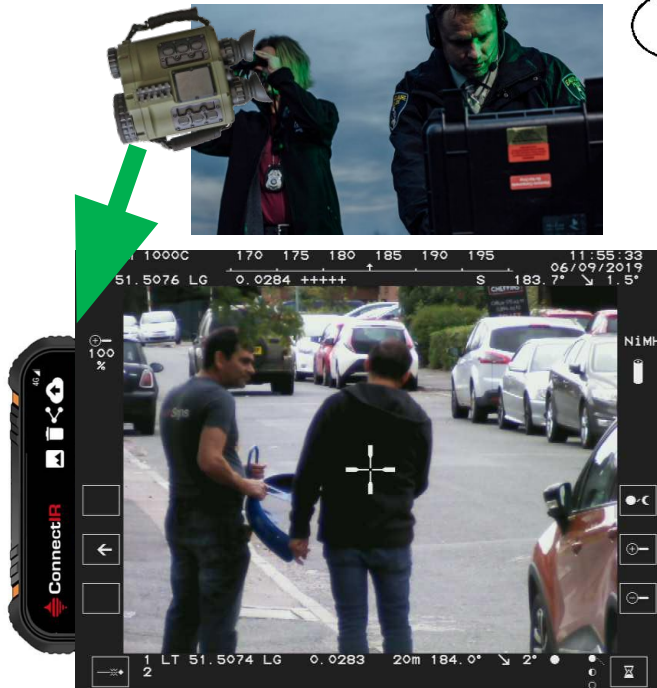
Wi-Fi  
Cellular network  
MANET

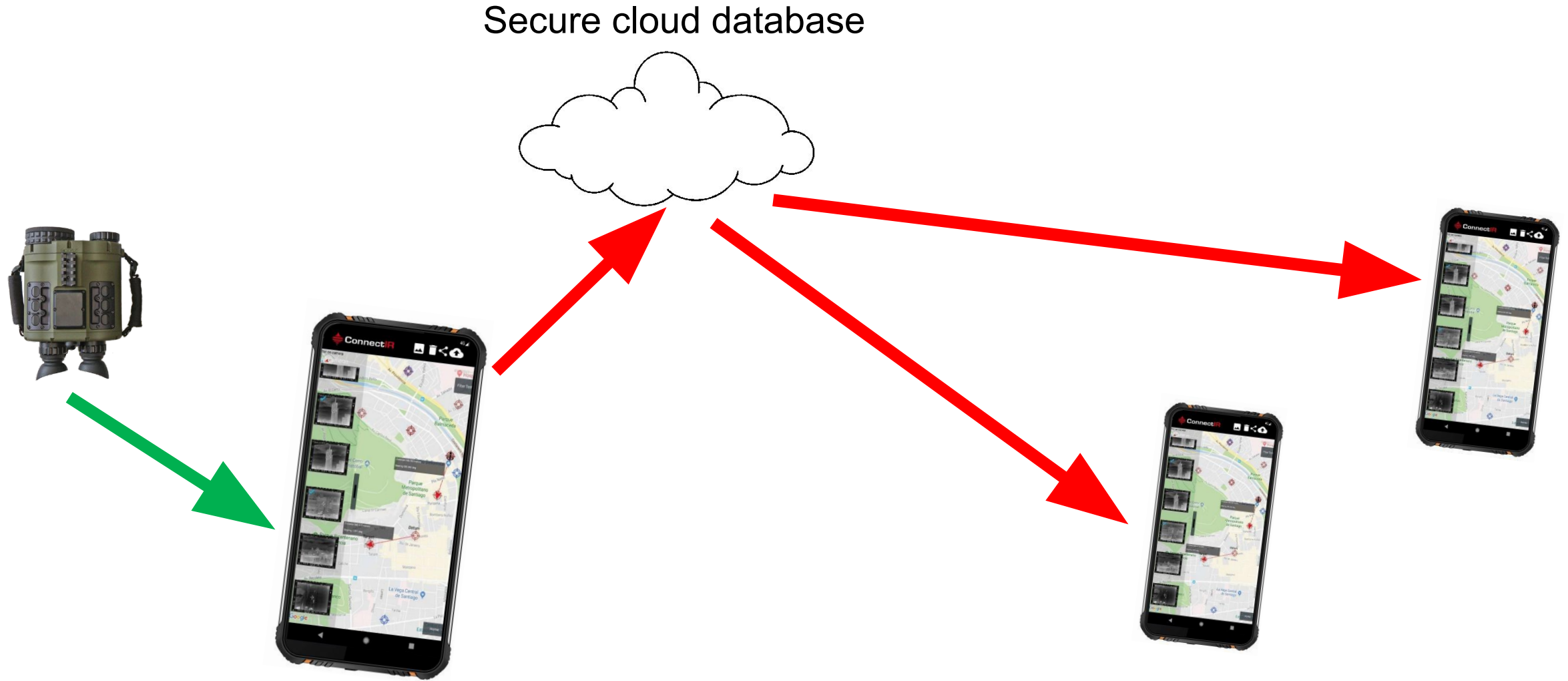


Secure cloud database



**Wi-Fi**  
**Cellular network**  
**MANET**





# Live demonstration ConnectIR & Triangulation in TiCAM 1000C

Ally Lawson



# Richard Hames

Conclusion



Afghanistan



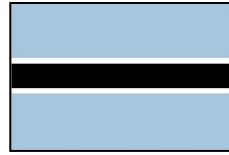
Africa



Australia



Austria



Botswana



Brazil



Canada



Chile



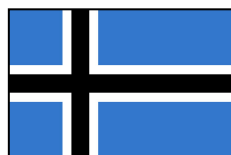
Colombia



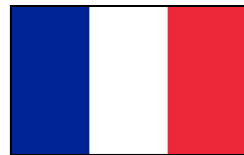
Czech Republic



Ecuador



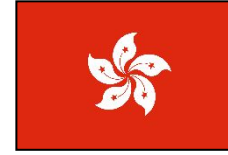
Estoni



France



Germany



Hong Kong



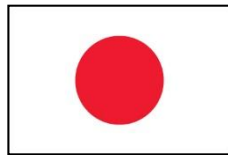
Italy



Israel



Indonesia



Japan



Korea



Kuwait



Lithuania



Luxembourg



Macau



Netherlands



Paraguay



Philippines



Poland



Saudi Arabia



Singapore



Slovenia



Slovakia



South Africa



Spain



Sweden



UAE



UK



Thailand



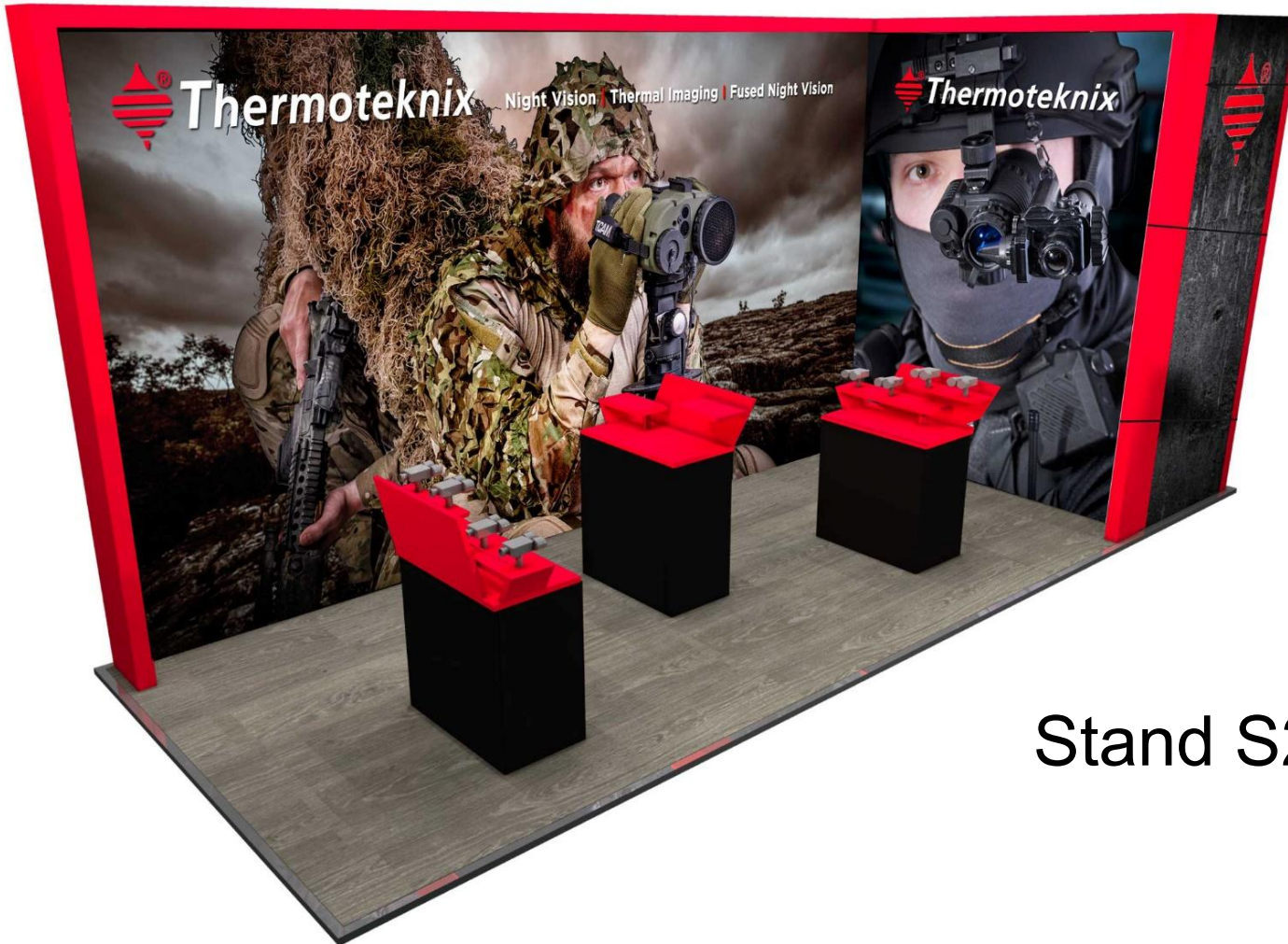
Turkey



Vietnam



Switzerland



Stand S2-315

 ***Thermoteknix***