

# The role of Augmented Reality in defence: the future has arrived

Thermoteknix launches new technology combining AR with thermal imaging and night vision

**T**he term Augmented Reality (AR) has been buzzing around in recent years in the video games community, but AR devices and systems are only now starting to penetrate the real-world military sector.

A variety of AR head-up displays and comprehensive combat platforms are beginning to emerge for today's dismounted warriors.

The Augmented Reality Tactical Interface Module, or ARTIM for short, is the latest AR technology to arrive on the market.

ARTIM combines AR and Thermal Imaging to enhance the soldier's situational awareness allowing the user to detect the enemy early, react quickly and maintain the tactical edge in low light and no light situations.

The technology has been designed and developed by British company Thermoteknix who specialise in thermal imaging and night vision. Thermoteknix manufacture a suite of Defence and Security solutions, ranging from handheld and helmet-mounted thermal imagers to night vision, fused devices and multi-function target location devices featuring their patented technology.

ARTIM can be operated as a stand-alone device or can easily be connected and integrated with existing digital combat technology platforms or secure military comms networks such as Android Tactical Assault Kit (ATAK) for real-time data sharing during missions.



ARTIM combines Augmented Reality (AR) and Thermal Imaging (via ClipIR XD) to enhance the soldier's surveillance and target acquisition abilities.

## Why AR is playing a bigger role in military operations

Augmented reality head-up displays improve the soldiers' battlefield awareness, reduces the number of devices that must be carried, and helps defeat enemies more efficiently.

ARTIM is an intelligent helmet-mounted battery pack that connects directly to the ClipIR XD Thermal Clip-on System (TCOS) which is attached to a monocular or binocular NVG. The miniature AR processor and smart computer are housed within the compact ARTIM unit which also powers the ClipIR for 24 hours continuous operation.

Projected through the NVG, the system displays user location and heading, together with target and route information either by pre-planning or real-time during the mission. It allows the user to see waypoints, headings and distances of marked points of interest, while also displaying real-time team member locations clearly in their NVG, remaining covert and without the need to release their hold on a weapon. ARTIM replaces the need for typical handheld GPS and navigation equipment.

Key data points can be overlaid securely onto a battlefield or mission profile – from mapping information to mission parameters, markers defining the movements of allied troops and enemy forces as well as rendezvous or extraction points.

Topographical data can be relayed along with video feeds from remote sensors or overhead drones. All the while, the transparent nature of AR viewed through the fused thermal



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The fused combination of thermal and night vision provides superior tactical advantages. ClipIR XD easily clips on to a Night Vision Goggle (NVG).

image lets the wearer maintain situational and environmental awareness in the most challenging of missions.

ARTIM enables soldiers to share information among their team members or input data whenever the situation changes. Faster, smarter, safer.

**Thermal imaging and AR: fusing the best of both worlds**

As a technology originally developed many decades ago for military use, thermal imaging allows soldiers to effectively see in areas where little or no light is present, such as at night, under dense foliage cover, or situations where smoke, fog, dust or any other airborne obscurant is present.

Thermoteknix developed ARTIM to complement and enhance its ClipIR XD Thermal Clip-on System. The ClipIR XD range has been on the market since 2019 and has already staked a claim as the preferred fused night vision solution for military and civilian forces around the world. The predecessor, ClipIR, was designed in 2011 and since its launch thousands of units have been supplied to many defence and law enforcement agencies. Thermoteknix is a recognised world-leader in thermal imaging fusion technology.

The UK MoD announced in June 2021 that it is equipping British troops with ClipIR XD Thermal Clip-on Systems over a 4-year contract to ensure its soldiers maintain a battle-winning edge.

When fitted to a night vision goggle (NVG), the real-time thermal image is injected into the objective lens of the NVG

to deliver thermal and night vision fusion or can display either sensor individually.

The fused combination of thermal and night vision provides superior tactical advantages compared to standard night vision or thermal imaging alone, adding the capability of detection of a man target at distances up to 580m.

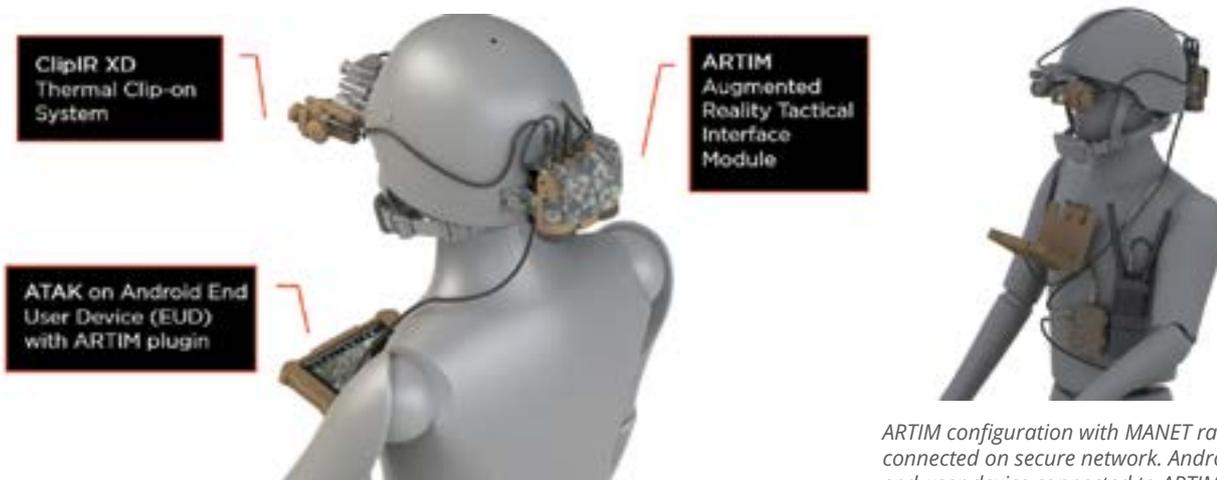
**Why AR is here to stay**

Armed forces have to face many critical situations and must make decisions without hesitation. Augmented Reality keeps the military aware of and ahead of upcoming dangers to keep soldiers safe.

AR systems like ARTIM benefit both leaders that manage the operations and field soldiers who are equipped with this game changing technology. Leaders can get a better perspective on large-scale missions, and the soldier is provided with real-time information superimposed on their fused night vision systems.

With growing demand from both the military and civilian law enforcement agencies for the benefits and added value delivered by AR, the R&D teams at Thermoteknix remain hard at work on developing the next iteration of AR solutions which incorporate and further enhance the benefits of thermal imaging. ■

**For more information on ARTIM or thermal imaging technology, visit [www.thermoteknix.com](http://www.thermoteknix.com)**



ARTIM does not require to be connected on network.

ARTIM configuration with MANET radio connected on secure network. Android end-user device connected to ARTIM with pre-loaded data or for real-time data feeds during mission.