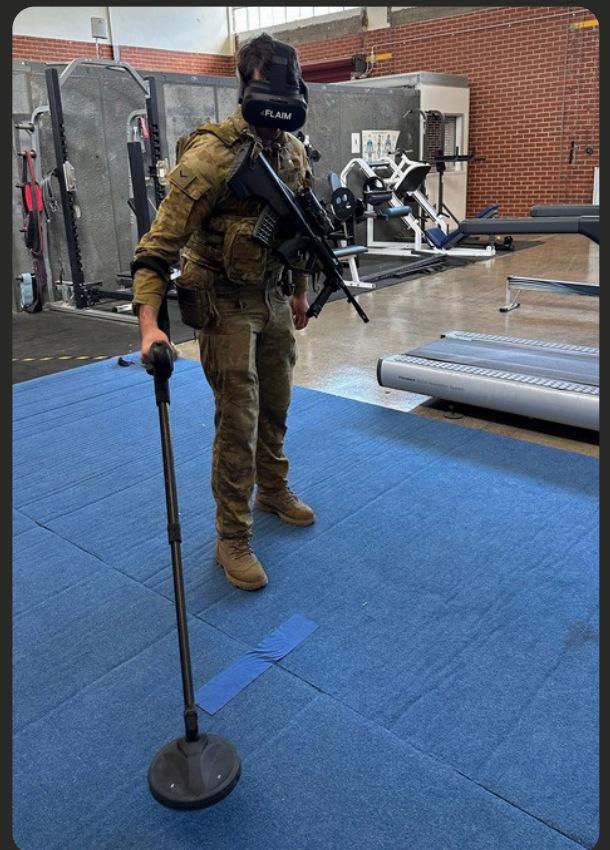# FLAIM

FLAIM EOD

MR EOD training system

FLAIM EOD is a next-generation mixed reality (MR) training system purpose-built for defence and humanitarian Explosive Ordnance Disposal (EOD) operations.

It seamlessly integrates industry-standard mine detection equipment with fully immersive virtual environments, delivering high-fidelity scenarios in a compact, portable setup, designed for on-demand training anytime, anywhere. FLAIM EOD enables realistic, scalable, and repeatable training without the logistical constraints of traditional field exercises.

Originally developed for the Australian Defence Force to train with the Minelab F3, FLAIM EOD can incorporate any demining equipment, enabling training across any land-based terrain and environment.

By embedding haptic feedback into industry standard mine detection equipment, FLAIM EOD offers a kinaesthetic, feels-real training experience in a safe environment. Its 'reps and sets' approach helps trainees build procedural muscle memory and tactical skills, complementing traditional field training.

With configurable scenarios, trainers can introduce new threats and adapt the target layout to suit training needs. Upset events like UAVs, gun shots, and other environmental inputs create threats and challenges, sharpening the trainees' risk-awareness to achieve targeted training outcomes. Real-time performance feedback is collected and compiled into detailed high fidelity After-Action-Review graphical displays providing insights into trainee technique and enabling continuous improvement.

Highlights

Readiness without the risk
Prepare trainees in a safe and controlled environment to complement field training events.

Train anytime, any place
On-demand training facilitates frequent practice to enhance risk-awareness and technique.

Integrate your hardware
Configure to any type of search equipment for application in any terrain or environment.

Who it's for

Defence

FLAIM EOD offers an advanced training solution tailored to the specific needs of defence counter mine operations. In military contexts, demining is often conducted under significant time pressure, focusing on rapid clearance of tactical routes and mission-critical areas. FLAIM EOD enhances operational readiness by simulating realistic environments, combining high-resolution virtual minefields with industry-standard mine detection equipment. This immersive training builds procedural muscle memory for combat engineers and counter mining specialists, preparing them to navigate the complexities of high-risk environments. The system allows for mission-aligned flexibility, ensuring that personnel can practice and refine their skills in both permissive and non-permissive operational scenarios. A ten minute set up time enables on demand training, reducing training preparation needs to a minimum and creating the conditions to train more frequently to enhance tactical, technical and procedural proficiency.

Humanitarian

FLAIM EOD is designed to support humanitarian demining training by providing an immersive and safe environment for deminers to develop and maintain their critical skills in mine clearance. Humanitarian demining requires methodical, safety-first approaches, aiming for 100% clearance to international standards. FLAIM EOD combines virtual minefields with industry-standard equipment to deliver a realistic training experience. This ensures trainees, often civilians and ex-military specialists, gain procedural muscle memory while reducing the risks associated with real-world operations. With its adaptable scenarios and real-time feedback, the system enables humanitarian demining organisations and UN supported efforts to train staff effectively, enhancing the safety of both deminers and communities. In Explosive Hazard Awareness Training mode, it allows deployed staff or refugees returning to an area with explosive remnants of war to grow familiarity with the hazards that may face them.

Why implement FLAIM EOD

	Safe onboarding	**Skills acquisition**	**Skills retention**
Learn	Familiarise users with equipment and a broad range of minefield environments, ensuring an understanding of the operational risks.	Learn key demining concepts, tactics, techniques and procedures using virtual scenarios that incorporate tactical design features.	Reinforcement of foundational skills and frequent refresher training.
Practice	Hands-on use of the equipment in a controlled environment, simulating mine clearance processes.	Practical exercises in simulated environments, focusing on the correct use of demining tools, situational awareness, and decision-making under pressure.	Repeated exposure to variable scenarios that can be tailored by trainers to adjust targets, their placement, include additional threats, adjust environmental changes for additional challenges and maintain proficiency.
Assess	Includes performance feedback tools to enhance a trainee's understanding of equipment usage and initial safety protocols, whilst ensuring readiness for advanced training.	Continuous performance assessment through simulated scenarios with real-time feedback, focusing on procedure accuracy and response time.	Comprehensive assessment with After-Action Reviews (AAR), highlighting skills gaps, and supporting Training Needs Analysis to deliver targeted re-training where needed.

Train for environments that are too dangerous or difficult to replicate in real life

How it works

The system replicates a handheld Minelab F3, the system in-service with the Australian Army.

FLAIM EOD monitors and measures the following movements, whilst delivering tactile haptic feedback in relation to grass and terrain:

- Height above ground
- Sweep speed
- Overlap
- Cupping
- Magnetic signature
- Target detection

The audio experience replicates existing detection signal based in a real time physics model to heighten the realism.

Biometrics are recorded in real-time, including heart rate, core body temperature and respiration data from the replica CBRN mask to inform the trainer of the trainee's stress-response.

The system includes a Trainer tablet to enable trainers to develop scenarios and explosive ordinance placement in real-time with live performance data so that trainers can deliver data-driven After-Action-Reviews.

FLAIM Capture provides real-time data recording, analytics and reporting to highlight performance metrics and inform future training strategy.

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The coverage, overlap and multiplayer analysis are an absolute game changer. Most of the devices missed during a search operations are from a swinging technique that isn't analysed properly resulting in the threat area not being fully searched, and the overlap between searchers. This system enables this to be trained well, analysed and become muscle memory.

Defence Training Instructor

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Benefits

Compatibility
The system can be configured to any type of search equipment for application in any environment, by any Security Force or humanitarian organising across the globe.

Heightened situational awareness
FLAIM EOD provides a fully immersive training experience designed to help trainees concentrate on all the tasks involved in a real-life operation, ensuring they are analysing the ground in front of them, using the correct techniques, listening and responding to the equipment, whilst responding to the environment around them.

Reduce training costs
Deliver training without the need for administrative paperwork, medical support, logistics and additional resources required to conduct a training exercise.

Understand trainee stress response
Capture biometric data, including heart rate, temperature and respiration data.

Flexible training
Train all year around in a climate controlled environment regardless of the weather.

Capture real-time data
FLAIM Capture, FLAIM's cloud-based Learning Performance and Analytics Platform provides valuable trainee performance metrics for analysis and reporting.

Tailored training
Customise your training with the ability to add additional operational environments or develop specific explosive target sets.

Minimise your carbon footprint
Reduce the amount of travel required by trainees by using an on demand system with a 10 minute set up either in barracks or in deployed facilities.

Boost cognitive retention with immersive learning*
- 4x faster to train than the classroom
- 275% more confident to apply skills learned after training

* http://www.pwc.com/us/en/tech-effect/emerging-tech/virtual-reality-study.html

Enhance safety
A safe training solution for explosive hazard awareness and countermine operations, including route clearance, lane and area clearance and 5m/25m drills.

Lightweight and portable
The compact design (fitting into two Pelican cases) provides ease of transportation between locations.

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Environments

Train for a range of dangerous and complex training environments, including virtual training lane, tropical (jungle path) Pacific Islands and Eastern European (Ukraine).

FLAIM EOD can be adapted for any global environment, from sub-Saharan Mali to the Congo, and from rural landscapes to urban cityscapes.

Trainers can tailor the training by creating scenarios and explosive ordinance placement in real-time. Trainers can adjust scenarios dynamically in real time to change target ordnance, their placement location, depth and camouflage.

Solomon Islands

Ukraine

Empowering the trainer

FLAIM EOD enhances the role of the trainer by providing powerful tools that deliver scalable and consistent training across various environments.

With its advanced technology, trainers have full control over the learning experience, from real-time performance tracking to scenario customisation.

What we've learned so far:

The following data is drawn from 59 surveys from the Virtual and Immersive Search Trainer roll out across 5 Army Combat Engineer units in Australia

97%
of users find it easy or very easy to operate

92%
of users are satisfied that the audio is realistic

90%
average rating for replica F3 detector realism

91%
rate the VR walking experience as effective

88%
rate it as very or extremely effective for real-life preparation

85%
report increased confidence in mine sweeping post-training

100%
of trainers & trainees found the visual After-Action-Reviews helpful

What's in the box

Control case

1x Power supply
1x AUS power cable
1x Keyboard
1x VR Headset
1x VR Headset battery
1x Controller
1x Headset charging cable
1x USB-C Y-Splitter cable
1x USB-C to USB-A cable
1x Removable foam layer

Detector case

1x Detector
1x Detector Tracker
1x Tablet
1x Tablet charging cable
1x Tablet power supply
1x Respirator filter
1x Half Facemask
1x VR Headset backup battery
1x Heartrate monitor
1x Heartrate monitor charging base
1x HDMI cable

FLAIM is trusted by:

CiNTAS · FIRE SERVICE COLLEGE · RelyOn Nutec 360° Safety · serco · ventia · KUWAIT FIRE · MEMPHIS FIRE DEPARTMENT · BAE SYSTEMS

AUSTRALIAN AIR FORCE CADETS · ABU DHABI CIVIL DEFENCE AUTHORITY · ⟨⟩ · ADNOC أدنوك · Xcel Energy® · Australian Government Department of Defence · BHP · أرامكو السعودية saudi aramco · CFA · QUEENSLAND FIRE DEPARTMENT

FLAIM at a glance

Customers	Systems deployed	Countries	Languages	Immersive scenarios
400+	1,000+	49+	28	180+

FLAIM EOD builds off extensive experience gained through the delivery of FLAIM's immersive firefighter and fire extinguisher training solutions.