



# Your expert partner in **AI** and **custom defense** applications

Developing high-performance simulation tools and realistic assets for military-specific training solutions used worldwide

**ASSIST**  
Innovative Minds

# Particularities of Defense projects

## Rapid Development, Maximum Impact.

We tackle the industry's toughest challenges: high-profile clients and critical time-to-market. We deliver complex defense systems, integrating advanced physics and 3D environments, on timelines typically considered impossible.

## High-velocity projects

We master tight margins and high-stakes requirements, delivering complex 3D systems and physics faster than industry standards.

## Adaptive platforms

We build dynamic, multi-functional architectures that seamlessly integrate external tools and scale across multiple client organizations.

## Business value focus

We guarantee mission success by enhancing your internal team with our expertise in product ownership and rapid, Agile project execution.



# Familiarity with industry challenges



## Building trust one step at a time

Our collaboration begins with a robust baseline prototype for rapid validation. We deploy a phased approach to guarantee superior risk management and steer significant business transformation.



## Defying the ordinary

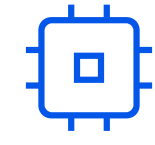
We master complexity, integrating legacy systems and proprietary engines. We deliver vast, 1000+ sq km maps that maintain extreme technical detail and provide unmatched operational realism.



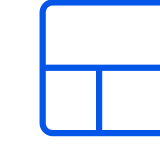
## Driving strategic business value

We guarantee mission success by enhancing your internal team with our expertise in product ownership and rapid, Agile project execution.





**AI/ ML Predictive  
Analytics, Planning  
& Optimization**



**White label  
military command  
& control platforms**



**AR/ VR/ XR  
Simulations,  
Training Engines**

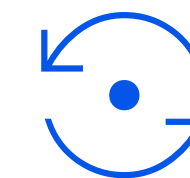
# WHAT WE DO for the DEFENSE INDUSTRY



**Communication  
systems and  
protocol extension**



**Drone simulations,  
control, and scenario  
applicability**



**Digital Twins  
and Environment  
Modeling**

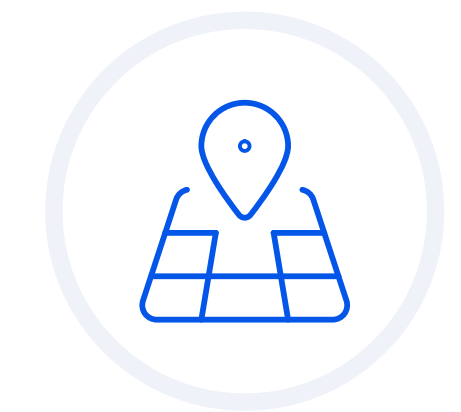
# Application Examples

We integrate new military equipment (vehicles, weapons) into the simulation engine, delivering full visual fidelity, functionality, and specific gear properties for training and combat AI.



## ADVANCED TACTICAL PLANNING TOOLS

Facilitate training for strategic planning and tactical execution. Features include a complex scenario configurator for managing pre-defined or custom training scenarios.



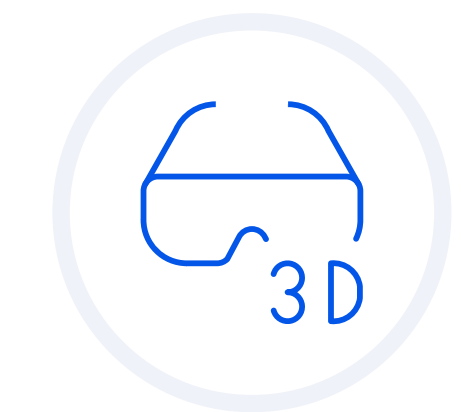
## COMPREHENSIVE PARACHUTE SIMULATOR

A cost-effective, multi-stage simulator that includes HALO jumps and realistic weather effects, acting as a powerful supplement to traditional training devices.



## HIGH-FIDELITY ASSETS & INTERACTION

We create assets and models that replicate real-life counterparts to the highest visual standard, critically including their physical interactions and intrinsic characteristics.



## REAL-TIME 2D/3D DATA TRANSPOSITION

VR applications utilize our engine to directly transform real-time operational data from a 2D map interface into a fully rendered 3D simulation environment.

# Technical case study: Secure VoIP interoperability



## 1. Challenge

To integrate a new communication system that enables flexible, real-time intercommunication among dynamically created military training teams (jumpers and instructors).

## 2. Our Solution

We delivered a new C++ API extension to VoIPServices, enabling flexible intercommunication for military training teams across Windows and Linux platforms.

## 3. Military Standard Compliance

We extended the RTP library to achieve the essential RTP ED-137/C standard for Aircraft-to-Ground Radio VoIP communication, integrating specialized codecs (G.729/G.728) and Kamailio SIP Server for robust GRS service.

## Tech stack

**C++**

**Jack Audio Connection Kit**

**VHF**

**VoIP**

**Windows**

**Real Time Protocol (RTP)**

**EDM**

**QT**

**SIP**

**R2S**

**Linux**

**C**

# Case study:

## Machine learning-driven swarm drones

---

**Combat AI** and a **path-finding** solution that can be used in large-scale scenarios with a focus on **swarm behavior**.

---

**Machine learning component** that will replace or augment the human pilot in controlling the drone swarm by **high-level strategic commands**.

---

**User interface** capable of providing the user with a **wide range of input** options and **real-time data**.

---

**Synthetic data generator** for creating data used for training of the image recognition sub-module.





105.5 km/h    35.17m    88% -> 88%  
[45.12834695°, 3.01023993°] -1.61m

# Case study:

## Military simulation components creation

### 1. Challenge

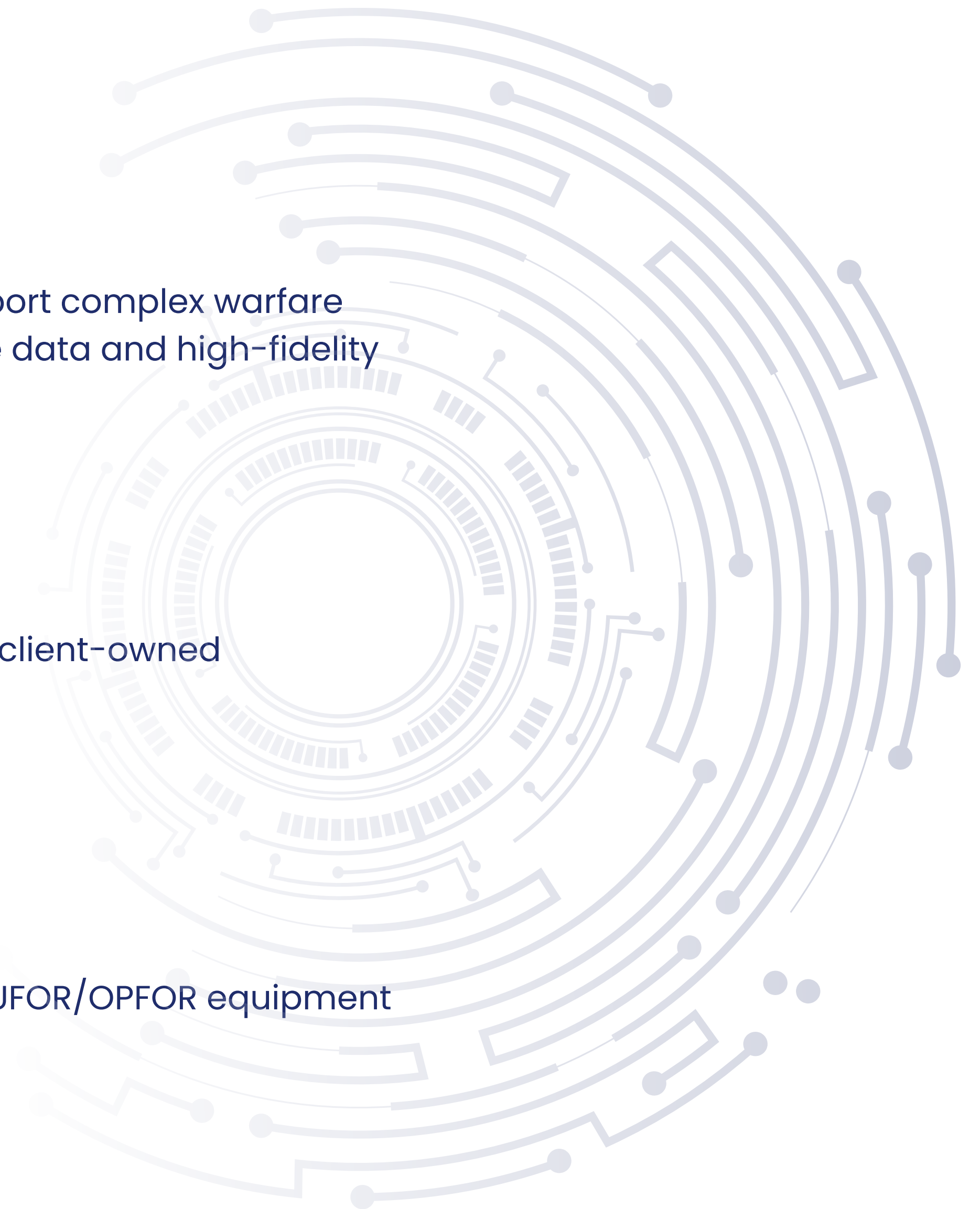
Defense organizations operate proprietary military simulation platforms that must support complex warfare operations, tactical training, and mission-specific scenarios, while integrating real-time data and high-fidelity environments.

### 2. Our Solution

ASSIST Software worked as a technology partner, supporting and extending an existing, client-owned military simulation platform using Unreal Engine 5 and real-time technologies

### 3. Functionalities & Realism

ASSIST Software supported the integration of ballistic simulation, large-scale terrain, BLUFOR/OPFOR equipment libraries, and real-time sensor and C4ISR data within a client-owned platform.



Throughout our experience with C4ISR systems we have also demonstrated capabilities of developing:

- Real-time weather systems
- Day-night setting for more holistic training
- Parachute malfunction system
- Advanced particle systems (smoke, fire) affected by wind
- Stereo vision capability
- Integrated voice processing system and speech recognition
- Real-time sensor and data systems

## Functionalities:

Real-world terrain data

Large-scale database

Fire solutions calculation

FlyEye kit integration

Soldiers full-body animations

Destructible environment

Voxel terrain

VR Integration

M777 artillery

Flight controls

Full ballistics

Physics simulation



# Case study: Advanced radicalization detection software

---

Privacy-first **situational awareness platform** designed for violent terrorism and crime prediction, radicalization detection, and citizen protection.

---

**Early-warning tool & Correlation engine** – Support Law Enforcement Agencies in detecting and linking potential **radical content**.

---

**AI integration & Machine Learning** algorithms – Uses advanced AI models for content **detection** and prediction.

---

**NLP Classifiers & Reinforcement learning** – Improves automated analysis and adaptive **decision-making**.

---

**Multilingual approach** – Analyzes content in 10+ European and global languages.





# Digital twin creation

Our team specializes in developing high-fidelity digital twin systems that enable defense organizations to model, simulate, and optimize complex military assets and operations in real time. By creating accurate digital replicas of physical systems we help clients reduce maintenance costs and bridge the gap between physical operations and digital intelligence.

From mission rehearsal simulations and equipment lifecycle management to base infrastructure modeling, we tailor each digital twin to meet the specific operational and security requirements of our clients. Our multidisciplinary approach ensures accuracy and reliability at every level of simulation fidelity and enables agility.



# Data security and compliance

Our extensive experience in security and compliance spans diverse sectors. We provide specialized solutions and meet rigorous auditing standards for Public Institutions, Governments, Military Applications, and the Medical/e-health sector.



## Public institutions

**Public sector**  
Industry

Orange Cyberdefense team worked with ASSIST to perform a security audit and validate an ASSIST developed application for public sector.



*Liberté • Égalité • Fraternité*  
RÉPUBLIQUE FRANÇAISE

## Governments

**e-learning**  
Industry

While developing a product for the online education industry, ASSIST has been vetted from a security perspective by the representatives of French authorities.



## Military Applications

**Defense**  
Industry

ASSIST has been creating Interactive Simulations apps used in military scenarios and the software produced has been tested for security threats by the USA Government as well as NATO.



## Medical solutions

**e-health**  
Industry

ASSIST Software has designed and implemented software applications which are FDA, HIPPA HiTech compliant and have aligned with ABBVIE standards by completing SQA process.

# ASSIST

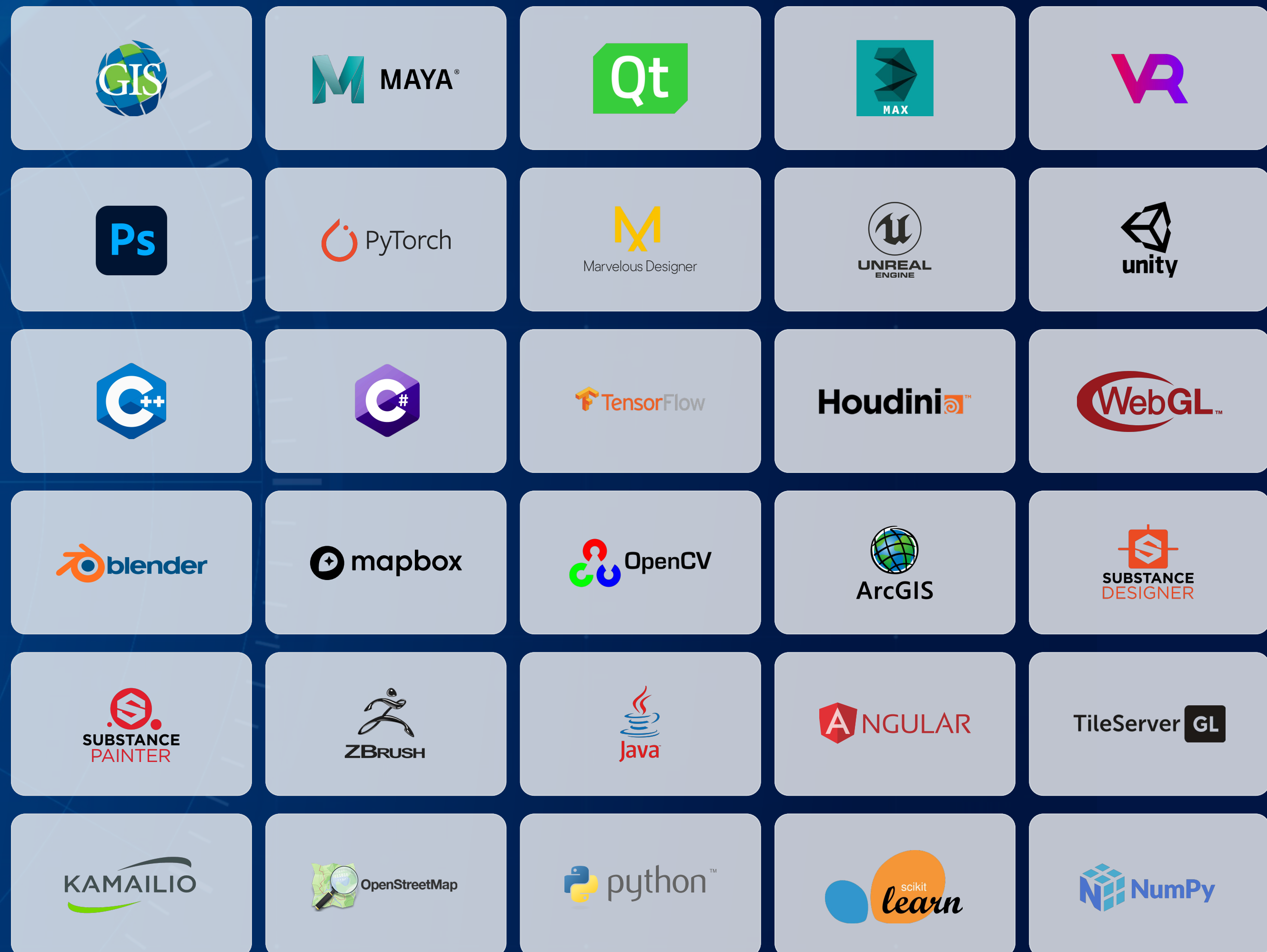
Innovative Minds

## Our defense software is:

- used in more than **60 countries** for tactical training and mission rehearsal
- constantly selected for “**Games for Training**” army programs
- recipient of **AR/VR/MR awards**

## TECH STACK

\* Non-Exhaustive



✉ [admin@assist.gmbh](mailto:admin@assist.gmbh)

🌐 [assist-software.de](http://assist-software.de)

📍 Am Technologiezentrum 5, 86159, Augsburg, Germany