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What's Up MAK

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STE is the U.S. Army's next-generation training environment

MAK expands to Orlando!

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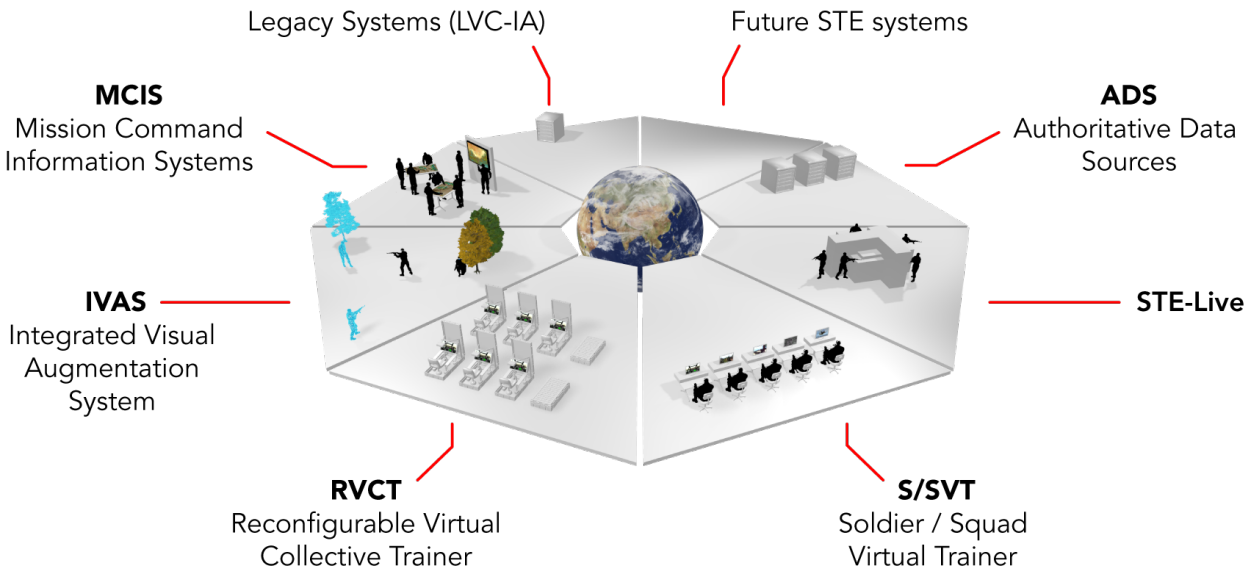

MAK's values pave the path to STE

As we begin our participation in the STE program with the US Army this month, it's fascinating to look back at what carried MAK through nearly thirty years of history to where we are today. We're sometimes asked if a new project will change how we operate. Many things have changed at MAK, from our logo, to our product suite, to our hairstyles (yikes!). What hasn't changed, and will never change, are our core values: we make open, interoperable, and flexible software that stands the test of time, and provide the best customer support in the industry.

Those are the values that were born in 1990, when John Morrison and Warren Katz huddled around a space heater in the basement of Katz's home in Cambridge. Together, they formed the genesis of a small technology startup called MAK Technologies.

Morrison and Katz believed they could transform the simulation industry by developing and spreading the use of open standards. They envisioned an open architecture -- a platform that is flexible, modular and fully extensible, welcoming

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the benefits of 3rd party applications and hardware, including models, controls, terrains, and interoperability protocols. The ultimate goal was to provide a platform that offered the freedom for users to build the virtual experience that they had always wanted. Their approach was also the foundation for MAK products' ability to welcome and adapt to future changes that include spontaneous technological advancements.

Those qualities appealed to the US Army, who was looking to develop a new, forward-looking platform that provides a collective, multi-echelon training and mission rehearsal capability with a unifying approach that would converge the virtual, constructive and gaming training environments into a single Synthetic Training Environment.

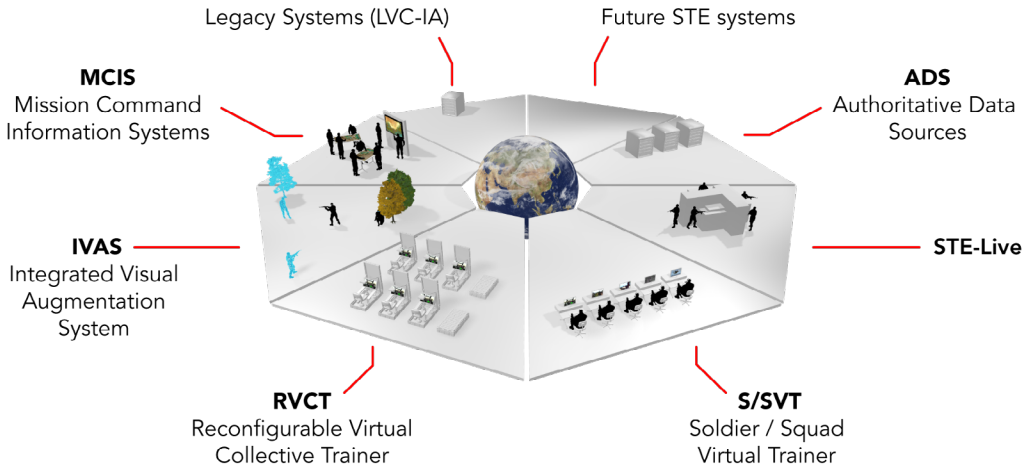
That is just as true as ever now. Customers can buy the same MAK One platform that the Army is basing their system on, today. If you want to build a system to work with the Army's, having the same foundation will give you an edge in interoperability. If you are building a training system and have similar needs to the STE needs, then you too will benefit by starting with the MAK One platform.

Openness is in our DNA. If you are a customer, you know how we have been paving our product roadmap with your inputs and specific requirements for the last 2+ decades. As we work with the Army to meet their specific needs for the STE, improvements to performance, scalability, robustness, cybersecurity and general capability will make their way into our commercial-off-the-shelf (COTS) products for the benefit of the whole MAK One suite.

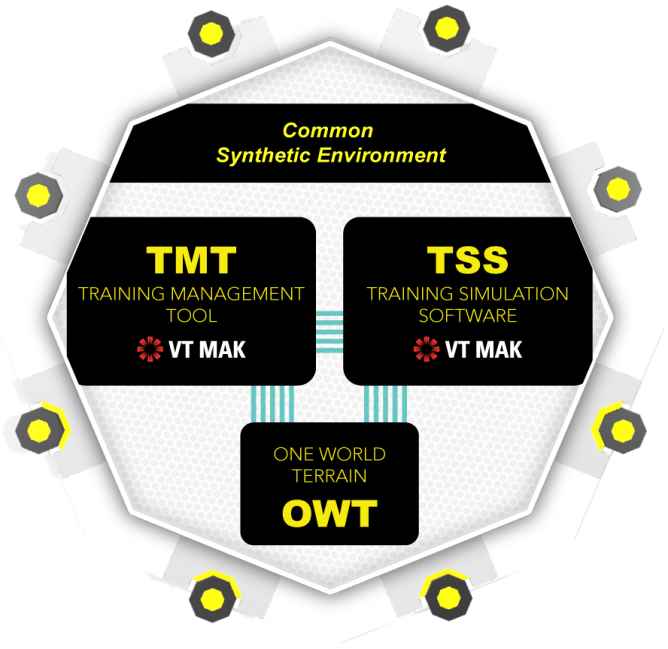
The STE is the U.S. Army's next-generation training environment

Envisioned as a single unified system that is available to all training audiences at the "point of need", which includes training centers, home stations, and deployed units. The STE is designed to overcome some of the traditional challenges of conducting large, distributed or complex training that arise when integrating disparate systems.

The STE addresses the need to keep soldiers training on the same equipment they use in the field while training in a synthetic environment that matches the physical reality of the world. The STE supports collective training and mission rehearsal with a common synthetic environment that uses portable and reconfigurable hardware and connects to Network Enabled Mission Command systems, operational networks, and live training instrumentation.



The core of the STE is the Common Synthetic Environment (CSE) consisting of simulation software, training management tools, and data. The CSE is a software solution that integrates with commercial and government provided hardware as appropriate for the training tasks. For example, COTS gaming hardware for soldier/squad training; GOTS reconfigurable virtual training devices made to match the fidelity needed for collective training; and instrumentation on live training ranges.



-Training Simulation Software (TSS) – Built on VR-Forces, the TSS provides the unified simulation software services that model, simulate, and adjudicate interactions among trainees as well as non-player computer-generated forces.

-Training Management Tool (TMT) – Built on the MAK One platform, the TMT will reduce the staff required to conduct training with an intuitive user interface assisted by AI-based intelligent tutoring to facilitate and simplify Planning, Preparation, Execution, and Assessment.

-One World Terrain (OWT) – Supplies a worldwide, continuously updated model of the physical world that can be modified in the field to reflect the current reality.

The needs of the STE matched with the MAK One platform characteristics

Concurrency

To keep pace with changes to the operational environment and to keep pace with technological advancements developed in commercial markets and on government programs, the system design must be based on a modular open systems approach (MOSA) to allow the seamless and cost-effective integration of new technology. MAK architecture meets that need.

MAK products have proven to keep up with emerging technologies as they meet the needs of a large and growing set of customers, who themselves have many use cases covering wide-ranging needs. The fact that our products have the flexibility to be customized at all layers of the architecture enables the STE design to have a core capability that will be used by currently planned and future STE systems.

Reconfigurable

The design for reconfigurable virtual training devices enables the same common synthetic environment representation to be used in semi-immersive configurations (e.g. with a keyboard, mouse, and game controllers) as well as with higher 'form fit and function' training devices that replicate real vehicles.

Agility and ease of configuration make VR-Vantage and VR-Engage well suited to adapting to different display formats and user input devices.

The ability to plug vehicle specific models into the VR-Forces Simulation engine facilitates concurrency as new vehicle capabilities are needed.

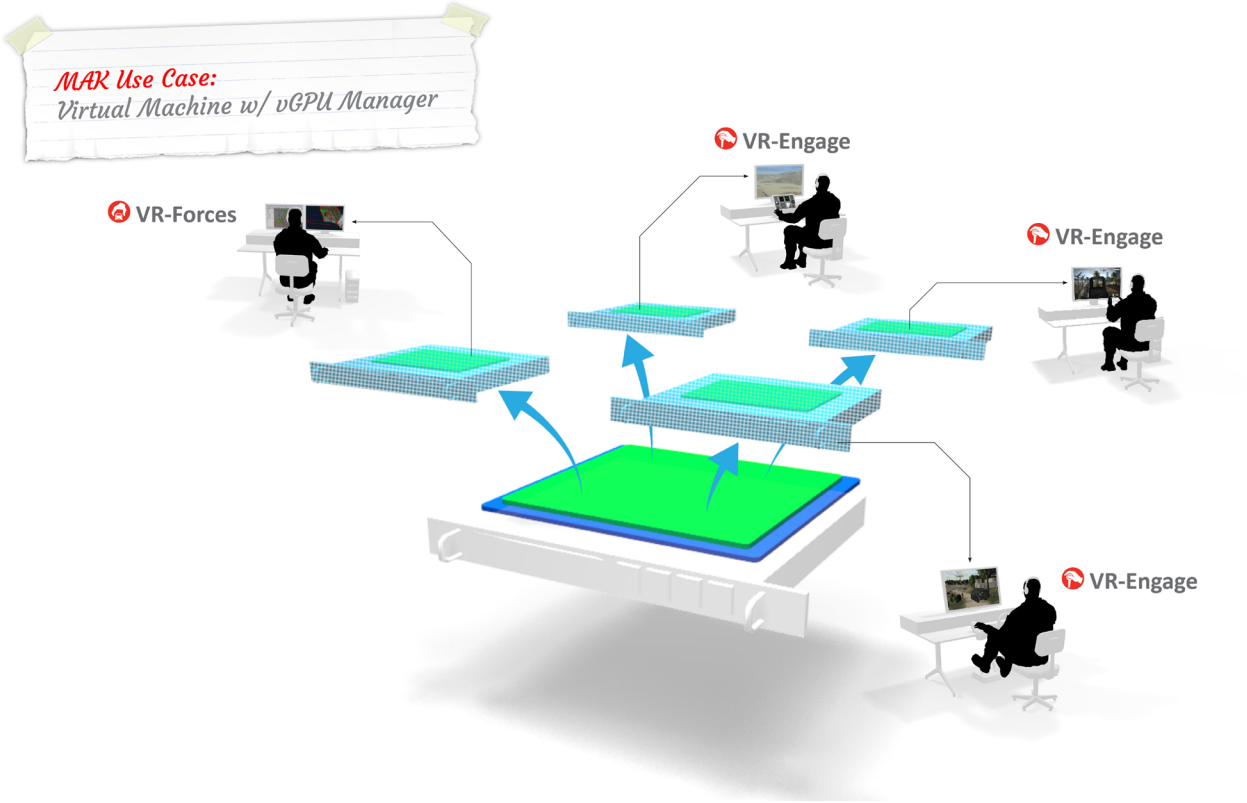
Smaller Less-expensive Immersive Displays

Of particular interest is the rapid advancement of virtual/mixed/augmented reality (VR/MR/AR) technology. These display technologies are supporting the drive toward portable and fully immersive training systems at the point of need.

MAK's VR-Engage Player Interface serves as an abstraction layer that separates the user interface devices from the control logic and rendering engine and allows developers to experiment with and deploy any HMD.

Scale & Cloud Computing

The compute power and data distribution needed to simulate large scale exercises with hundreds of thousands of non-player CGF characters and virtual player entities anywhere in the world demands a cloud deployment model. The Training Management Tool has the job of determining the number of compute nodes and area of terrain data required to run VR-Forces Simulation engines and then allocating them for the duration of the exercise, then releasing them when the training is complete.



The VR-Forces architecture, which separates back-end computing of Simulation Engines from the front-end user interface, is well suited to cloud deployments and is one of the reasons that MAK's solution was chosen as "best of breed" to meet the Army's STE needs.

See a live demonstration in the AWS cloud: MAK One Demo on AWS

Deliverable to the Point-of-Need

An overarching goal of STE is to make training available at the "Point of Need" (PoN) – The place where soldiers conduct their training and the location on the Earth where they are training for the mission to occur.

One of the reasons MAK was chosen to develop the CSE is that MAK demonstrated thought leadership in system architectures and has proven desktop, server, virtual machine, and cloud deployments that align with the Army's requirement for a training system that can span the architectural gamut and reach the "point-of-need."

Learn about deployment flexibility: The MAK Suite Guide to Virtualization

One World Terrain

The MAK One suite of simulation products is ready-made to address the One World Terrain need.

Because MAK has long lived with the user requirement to simulate whichever type of terrain the user has available, we have built "Terrain Agility" into all our application level products. VR-Forces, VR-Engage, and VR-Vantage all contain the unified MAK Earth Terrain Engine which can load static terrain databases or stream terrain data directly from VR-TheWorld Server.

The unified MAK Earth Terrain Engine ensures correlation among all the client training systems getting services from the CSE.

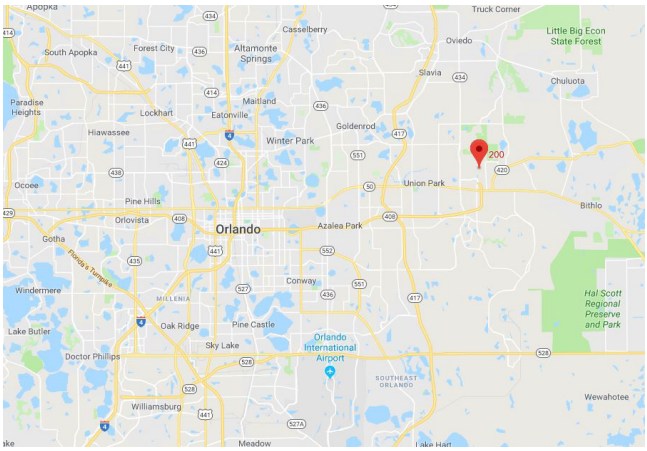
MAK's OWT solution for the STE, along with the OWT vendor Vricon, is to build a pipeline from the Army's massive (multiple petabyte) model of the Earth to localized instances of VR-TheWorld Server to stream terrain data to the STE Training Management Tool and the Training Simulation Software that is all built upon the MAK One suite of software.

Interoperability with Legacy Systems

Interoperability is at the heart of MAK's simulation networking tools. MAK has spent the better part of the past three decades supporting interoperability among simulation systems, operational systems, and Mission Command Information Systems (MCIS). Connecting the STE with other LVC-IA compliant systems is a built-in capability to all MAK products: VR-Link MAK RTI VR-Exchange

MAK expands to Orlando!

As MAK begins work on STE, we will be putting a new MAK flag on the map, with a brand new office and lab in Orlando! The new location is 13501 Ingenuity Drive, Suite 200, Orlando, FL 32826, in the Central Florida Research Park. Heading up the MAK team in Orlando will be Ken Garrison and Christina Bouwens, industry veterans with significant experience.



The Orlando office represents MAK doubling down on our core value of providing great service and an "engineer-down-the-hall" approach to our customers. If you thought our service was good before, it only gets better now. In addition to improved support, we also want to give customers in the Orlando area a chance to meet the team and put a local face to our products:

Program Manager: Ken Garrison: Ken comes to us from Nova Technologies, where he served as Vice President, and Program Manager for PEO STRI's $65M Call For Fire Trainer. He has a long history in program management on Modeling and Simulation Programs, including a $54M FAA Tower Simulation System program while at Adacel.

Deputy Program Manager: Dr. Christina Bouwens: Chris comes to us from the University of Central Florida (UCF) where she was a Research Assistant Professor serving as the Technical Director for the Complex Adaptive Systems Laboratory and as Program Manager for a four year DARPA program simulating information spread on social media. Chris has been an active program management and systems engineering leader in the M&S community for over 25 years, leading applied research programs for the Army and the DoD while teaching undergraduate and graduate level courses in systems engineering and program management for UCF and within SAIC. She served as Vice President and Director of Programs / Program Support for SAIC (now Leidos) - providing program management and CMMI process oversight and support for some of the largest M&S programs for PEO STRI and other customers. Several of us have known Chris for many years as an early and active member of the SISO and I/ITSEC community.

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Recent product releases:
VR-Engage 1.4 is the first version of VR-Engage to be built on VR-Vantage 2.5 and VR-Forces 4.7 (which were released in May). VR-Forces 4.7 and VR-Engage 1.4 can be used together to provide both CGF and player-controlled entities in a common scenario. This release includes the new drone operator role and improvements to the sensor operator role.

VT MAK is pleased to announce the release of WebLVC Server 1.5. This feature release upgrades the WebLVC Server to VR-Link 5.4.1 making it link compatible with VR-Forces 4.7 and VR-Vantage 2.5.

Upcoming events:
Want to see the MAK One Suite that the US Army is basing their Synthetic Training Environment (STE) on in person? Steve Peart and Dan Brockway are coming to Australia to conduct live demonstrations in August, with stops in Sydney and Canberra! These seminars are the best way to get an in-person understanding of the system. Steve and Dan will also give an overview of the MAK products, show how they can be used for mixed reality systems, as well as how they can take advantage of cloud architecture. Registration is required, and seats are limited. Click on a location and date to sign up: Sydney - August 12 Canberra - August 14

Upcoming training classes:
Topic: VR-Forces Training (On-site) Date: September 16 -20
Week-long class designed to guide students through VR-Forces. Please contact your sales rep to sign up. Recent Class Recordings: Topic: What's new in VR-Forces 4.7 This class is designed to introduce and explore the latest features of VR-Forces 4.7, the newest release.

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Topic: VR-Forces 104 - Simulating Humans Characters & Activity in VR-Forces
Webinar will focus on how VR-Forces can be used to simulate individual human characters and their associated behaviors and actions. The webinar will also cover how these individuals can be aggregated into a group and associated group behaviors.

Topic: VR-Vantage 102 - Introduction to Configuring Terrain Files for VR-Vantage & VR-Forces
Webinar will focus on basic details of how to configure terrain files for VR-Vantage and VR-Forces. The webinar will provide introductory details of .mtf and .earth files and how they can be use to load, manage, and render Elevation, Imagery, and Feature data.

Jobs @ MAK:
We're hiring! Check out our brand new MAK careers page and see the latest job postings.