

Excavation Safety Training Simulator

The VR-X Sim transforms traditional best practice excavation training.

Developed with guidance and refinement from industry experts for real-world accuracy & relevance.

Enables 811 organizations, utilities, contractors, and excavators to train, assess, and improve safety.

Prevents damage to underground assets through best-practice visualization.

Safe-to-fail 811 scenarios with instant feedback and reinforcement.

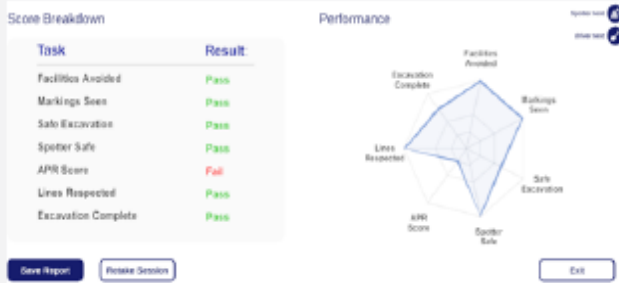


The VR-X Sim is an advanced 3D VR simulator that teaches safe excavation practices required by 811 and state laws, focusing on compliance and risk reduction - not simply equipment operation.

- Improves safety by reinforcing correct excavation procedures
- Reduces utility strikes, claims, and costly repairs
- Speeds up training and boosts engagement and retention
- Ensures compliance with 811 and state excavation requirements
- Scalable training tool for organizations with multiple operators

Realistic Training Scenarios

- Immersive multi-user environment: Operator + Spotter roles
- Excavator cab with motion chair and joysticks
- Configurable buried infrastructure (gas, water & telco)
- APWA color-coded locate marks and dig zone boundaries
- Simulation of 811 ticket and APR workflows
- Dynamic scenarios including mis-marked utilities



The VR-X Sim goes beyond simple operator training by immersing both the operator and the spotter in realistic job site conditions. The spotter role includes eye tracking, hand signals, and dig zone mobility, ensuring teamwork and communication are reinforced.

Trainers can configure white-line markings and tolerance zones while introducing scenarios such as shallow cover, mis-marks, and hand-digging requirements.

Throughout each session, the system delivers visual and audio cues for unsafe practices or utility strikes, simulates excavation penalties like soil piles over markings, and provides powerful 3D visualizations and sounds of damaged facilities to drive home the consequences of errors.

Measure Performance and Visualize Results

Automated scoring of critical excavation steps with cloud-based dashboard for session tracking and performance metrics.

Data export and reporting for compliance and training records. Instructors can add/manage users, customize scenarios & intervene in real time.

VR-X Sim

Description

The VR-X Sim is training platform designed to teach safe digging practices through immersive, scenario-driven modules.

Trainees progress from ticket verification and utility mark interpretation to hands-on skills such as daylighting and safe machine operation, with branching responses for unexpected utility encounters and strike events. The system supports both hand tools and excavator controls, integrates industry-standard color codes and tolerance rules, and records performance metrics such as proximity to utilities and adherence to exposure methods.

The VR-X Sim provides repeatable, measurable training that reinforces regulatory compliance.

Package Contents

Hardware

- Performance laptop x 2 (pre-loaded with all software services)
- Excavator chair with joysticks and 2-axis motion platform ($\pm 10^\circ$ tilt)
- 2 x Meta Headsets + Controllers
- Wi-Fi Router

Software

- VR-X Simulator UTTO Platform with multi-player sync
- Driver & Spotter avatars with collision/interaction system
- Instructor dashboard for user/scenario management
- Logging, scoring, and data export capabilities

Recommended: External Monitor (not included)

Specifications and features are subject to change without notice.

Communications

Bluetooth & Wi-Fi 6E

Software Updates: Over web from UTTO

Mobile Devices: Laptop & Meta Headsets

Power Supply

Laptops & Headsets:

Rechargeable Lithium Ion

Operation time: 3 hours typical for VR Headset,
4 hours for laptops*

Charge time: 1 hour typical via USB-C

*Headsets can operate while charging

Excavator Chair:

Power Source: 110V – 240 VAC 50-60Hz

Physical/Environmental

Chair Weight: 180 lbs / 81 kg (shipping)

Dimensions: 36" x 36" x 43"
(91 cm x 91 cm x 107 cm)

Operating Temperature: 32-104°F / 0-40°C Min.

Humidity: Min 5%, Max 95%

Part Number

VR-X Sim: 2650

Warning: VR use may cause dizziness, nausea, or motion sickness—stop if you feel unwell. Use only in a clear area and be cautious while walking. *For indoor use only, do not use the system outdoors or in direct sunlight.*

V1.1 9-25