Vision:

Provide the function and support our customers need to fulfill their research and development goals, while keeping the miniSim an affordable and accessible solution.

Stats:

• Over 70 simulators at 55 sites
• Over 100 user publications, reports, and dissertations published to date
• Over 20 years of development at the University of Iowa
• Supported by team of full-time staff members
• Single PC
  • Cost Effective
  • Reliable

• Configurations
  • Desktop
  • Quarter Cab
  • Half-Cab
  • Custom

• Compatible with NADS simulators
  • NADS researchers use the same tools daily
  • On-site development and support staff
Common tools used across all NADS simulator platforms

- Integrated Scenario Authoring Tool (ISAT) for scenario authoring
- Tile Mosaic Tool (TMT) for map assembly
- nDAQtools for data reduction
miniSim™

Display configurations:

3 x 24” LCD

3 x 48” LCD
Hardware configurations:

- Desktop
- Simplified Cab
- Quarter Cab
Supported wheel and pedal systems:

- ECCI Trackstar 6000
- Fanatec Wheel Base
- CSL Elite Pedals
- Loadcell Brake
- miniSim Steering and Pedal Loaders (half- and quarter-cabs)
Half-Cab Simulators:

Projectors and Curved Screens
Half-Cab Simulators:

All are single PC!

Projectors and Flat Screens
Custom Configurations:

Mobile

Clinical Trials

Training

Ophthalmology Research

All are single PC!
Custom Simulators and Cabs
Installation and Training

Onsite Assembly

Projector Installation

User Training
miniSim™ Integration Features

**Network**
- Trigger events in simulation
- Control miniSim AutoDriver
- Log data in miniSim
- Control external devices
- UDP over WiFi, LAN, etc

**User-Defined Subsystem**
- Direct Read/Write to Simulation

**Hardware Subsystem**
- Handoff Control
  - NADS AutoDriver
  - External control
NADS AutoDriver
• 8 basic behaviors (lane change, merge, exit, etc)
• Control via scenario triggers
• Control via your own automation system

NADS Virtual World API
• Provides sensor-like data in real-time
  o Geometry
  o Speed Limits
  o Scenario vehicles and objects

Hardware Subsystem
• Controls Handoff via
  o Scenario trigger
  o External system (UDP)
  o Manual input
ISAT™: Integrated Scenario Authoring Tool

GUI Interface
- **No Scripting required**
- **Sophisticated event triggering**

3 Modes
- **Edit**
- **Rehearsal**
- **Playback**
A Tile-Based Approach to Building Road Networks
TMT™: Tile Mosaic Tool

Includes the following:

>250 Tiles
- Urban
- Residential
- Freeway
- Rural

- Assemble your design
- Export to miniSim
Custom Tile Development

- U.S. and International
  - AASHTO
  - EU
- Replica or ‘typical’ environments
- Accurate sign fonts and color
- New and aged road markings
- Many source data formats
- Extensive existing libraries
- Support for non-NADS simulators
Wrong-Way Countermeasures

Custom Tile Development Service
Compatible Eye-Tracking

**Ergoneers**
- ✔ D-Lab data acquisition
- ✔ Dikalbis and Tobii

**Smart Eye**
- ✔ SmartEye Pro
- ✔ MAPPS

**Eyetracking Inc.**
- ✔ FOVIO
- ✔ EyeWorks
- ✔ Tobii
Compatible Motion Systems

D-BOX
// Move the World™

SG SIMGEAR

ELEETUS™ SIMULATION IN MOTION
NADS Infotainment System

- Available Skins include Toyota Entune and Tesla 3
- Cross-platform via Node JS and Chrome apps
  - Raspberry Pi 3+
  - Android and iOS
  - Windows
- Data Acquisition
  - Menu and Button Status
  - Touch Position
  - Operator Interface
- Audio Playback (MP3 and Internet Radio)
- Map display
- Scenario Integration
Infotainment System

Toyota Entune
minisim™ Infotainment System

Tesla Model 3
Springfield: Anytown, USA

A Virtual Proving Ground for Automated & Connected Vehicles
✓ Built, Tested, and Ready to Go!
✓ Ambient Traffic
✓ Diverse Environment
  • 285 square miles
  • 230 miles of roadway
  • 178 intersections
  • 143 traffic signals
  • 1362 signs
✓ Supports many applications
  • Automation Development
  • UI Testing
  • Distraction
  • Outreach, Education

NADS Springfield Road Network Option

19 miles
15 miles
NADS Springfield Road Network Option
Video Capture Option: NADS VidCap™

- Synchronized
- Data Overlay
- 4 x Cameras
- Full HD
- AVI, MPEG4
Run your carSIM® and truckSIM® vehicle models on your NADS miniSim™ driving simulator.

NADS has integrated Mechanical Simulation’s VS Solver into the miniSim, providing the capability to run your own chassis, tire, aero, and drivetrain Math models in the miniSim simulation environment.
miniSim™ now supports DI-Guy digital humans from VT MÄK.

DI-Guy creates natural-looking smooth behavior for its more than 2,000 motions and transitions.
miniSim Team

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ISAT, Behaviors, Rendering, Audio, Logical Road Interfaces

Vehicle Interface Evaluation, Standard Testing Protocols, Safer-Sim UTC

Additional Resources

miniSim supports@uiowa.edu