Vehicle Automation Kit

Automate Any Vehicle, Perform Any Test

ASI's vehicle automation kit is universal and can be installed on most vehicle makes or models. Once installed, the vehicle can be used to perform a wide variety of tests with extremely high precision, improved safety, and higher productivity. An automated vehicle is not limited to the physical constraints a human driver is.

Proving Ground Management

Vehicle Management
Multiple Vehicles – Single operator, multiple vehicles  
Perform any test – Increase efficiency and precision  
Asset tracking – Keep track of manned and unmanned vehicles

Test Management
Queue test scenarios. Playlist feature allows user to maximize operational efficiency by seamlessly ordering tests.  
Event planning. Prescribe specific events on test tracks so a vehicle executes orders precisely.

Soft Target Integration
System can integrate with soft target platform vehicles.
Kit Sensors
Sensors collect environmental info and relay it to the onboard VCU to give awareness to the automation system.

Control Unit
ASI's patented VCU computer is the brain in the vehicle. It communicates with the sensors and controls the vehicle. It also relays info between the vehicle, server, and Mobius®.

Actuators
Universal actuators are placed in the vehicle to communicate with the VCU so that vehicle operations can be controlled safely and accurately. In by wire vehicles, no actuators are needed as the VCU integrates with the vehicle controls directly.

Misuse, Impact, Rollover Testing
Robotic Automation Benefits

Variability Between Human Drivers vs. ASI’s High Precision Robotic Kit

This data was taken from real proving ground durability tests and highlight the variability between human drivers and the variability between ASI robot drivers.

Four vehicles of the same model were subject to a standard durability test cycle. Two of the vehicles were driven by two different drivers. The other two vehicles were driven by two different ASI robot drivers. Each vehicle was fitted with an accelerometer measuring force in a single axis. The charts to the left plot the measurements made on the four trials at that same point.

Accuracy

The Frequency Response and Histogram charts at left highlight the reduced variability between robot drivers when compared to similar data from human drivers. Robot drivers allow for much more consistent application of your drive cycles to your prototype vehicles.

Repeatability

Tests being repeated more consistently by robotic drivers mean the integrity of that data increases due less variability in the results.

Productivity

In results from proving grounds that were conducting tests performed by ASI robotic kits, they were able to complete a series of tests in about half the time that it would take human drivers to complete that same series of tests. With robotic drivers, there is no need for regulated brakes or switching drivers out.

Safety & Stamina

The ASI automation kit is rugged enough to withstand any harsh durability test, and repeat it over and over again without any need to stop. A robotic automated durability test vehicle can run for as long as its fuel tank will allow.

Robotic drivers can be used in tests that are not suitable for humans.

Value

Enjoy greater productivity and economies of scale as single operators can control multiple unmanned vehicles.

A robotic automation kit costs much less than trained durability drivers operating the same vehicle.
**Mobius® Fleet Management Platform**

**Boost Productivity**

**MULTI VEHICLE CONTROL**
Operate multiple vehicles simultaneously on multiple tracks from a control room.

**PATH BUILDING**
Creates a drivable path that can be customized to match testing needs and course routes.

**EVENT PLANNING**
Execute actions at a specific point in a path. Functions include: acceleration, variable force braking, stop, wait, lane change, roll over, and more...

**Increase Accuracy**

**HIGH PRECISION RESULTS**
Our autonomous kits will drive vehicle test performances to the highest level. With very little discrepancy from one lap to another, you will have more precise data and better results.

**REPEATABILITY**
A robotic driver can repeat tests over and over without fatigue or worry of injury, allowing operations to get results faster and safer.

**Improve Safety**

**SAFE AREA LOCKOUT**
These areas exist around autonomous vehicles and can be designated around human controlled vehicles on a track. Unmanned vehicles will stop if they approach any designated safe areas.

**LIVE TELEMETRY**
View real-time gauges and meters that display a vehicle’s current speed, gear, RPM, fuel level, & more...

**E-STOP**
If unmanned vehicles leave the safety area or lose signal, the e-stop override immediately applies the brake.

**ADAS Testing**

**SWARM TESTING**
ASI’s driverless technology is integrated into a host vehicle to execute multi-target testing. Perform prescribed high or low speed validation testing of autonomous vehicles and systems.

**AUTOMATED SAFETY RIDER**
Dynamic vehicle control hand off of host vehicle from ASI to OEM for prescribed OEM scenario testing. ASI regains control to end test and begin the next.

**SAFETY**
When safety criteria are crossed, ASI technology can take control to bring the vehicle to a safe stop.

**SIMPLE SITE SETUP**
Quickly generate custom maps, designate lanes and roadways, set safety perimeters, and create field areas with Map Builder. Experience the simple, clean Mobius interface that leverages advanced design and development techniques and incorporates user testing results from industry professionals.

**MULTI VEHICLE OPERATION**
Enjoy greater productivity and economies of scale as a single operator controls multiple unmanned vehicles interacting in the same area or at dispersed locations. Improve productivity with embedded artificial intelligence modules that automatically task vehicles, generate maps and paths, and more.
Contact our sales staff for quotes, to schedule a demo, or for any additional information.

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ASI offers initial installation and training to get your equipment up and running.

Our dedicated and knowledgeable support staff are here to help.

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