

The logo for VOYO .iO is displayed in a light blue color. The letters 'V', 'O', 'Y', and 'O' are in a bold, sans-serif font. The '.iO' is enclosed in a circular icon to the right of the main text. The background of the top half of the image is a dark, abstract, low-poly geometric pattern in shades of grey and black.

# Leading-Edge Telematics Solutions Powered by Advanced Data

- 1 Vehicle Data Parameters
- 2 Engine Health
- 3 **VOYO** Cellular
- 4 **VOYO** Bluetooth
- 5 Scan Pro
- 6 Lookout Alerts
- 7 Mobile App

**VOYO** OBD-II controllers download configuration files that allow the device to adapt to a specific vehicle make, model and year. The controllers communicate with all vehicle controllers and report up to 100 parameters including vehicle operating conditions, driver behavior and weather information. **VOYO** works on all vehicles built since 1996. Advanced data is available for vehicles from 2008 or newer and there are options to acquire additional data for older vehicles.

### Vehicle

- VIN
- Make/Model Year
- Engine Type
- Transmission Type

### Driver/Passenger Parameters

- Doors Opened/Closed
- Trunk Opened/Closed
- Hood Opened/Closed
- Doors Lock/Unlock
- Seatbelts
- Passenger Present
- Turn Signals
- Headlights
- Parking Brake
- Horn
- Hazard lights
- Interior Lights
- Alarm
- Radio Channel/Volume

### Operating Parameters

- Time Stamp
- Engine Status
- Engine and Vehicle Speed
- Key Position
- Shift Position
- Transmission Gear
- Clutch Position
- True Odometer
- Accelerator Pressure
- Brake Pressure
- Steering Wheel Angle
- Fuel Level

### Engine Parameters

- Coolant Temperature
- Fuel Economy
- Mass Air Flow
- MAP Sensor
- Engine Load
- Oil Pressure / Life
- Engine Health Data and Readiness Monitors for Emissions Compliance

[MORE ENGINE PARAMETERS >](#)

### Safety Systems

- Anti-lock Brakes
- Traction Control
- Stability Control

### Weather Parameters

- Barometric Pressure
- Ambient Temperature
- Intake Temperature
- Windshield Wipers
- Fog Lights
- AC Compressor

### Other Systems

- Battery Voltage
- Battery State of Charge
- Tire Pressure
- Tire Temperature
- Controller Sensors
- 3-axis Accelerometer
- GPS
- Cabin Temperature

### Diagnostic Trouble Codes (DTCs)

- Generic – Engine Control Unit
- Manufacturer – All Controllers

- **VOYO** with Scan Pro reads generic and manufacturer codes from all controllers
- Lists controllers found on vehicle, codes found by controller, code descriptions, symptom byte data, status and time/date/location code was set
- Scan once per minute while vehicle is operating
- Support for over 150 million vehicles in USA and Canada 2008 or newer
- If no support, report will display generic codes accessed from the ECU

### Custom Data

Additional parameters can be added to **VOYO** firmware as needed including generic and proprietary parameters. Additional CAN data may be available depending on model.

### Freeze Frame Data

In addition to advanced PIDs and DTCs, **VOYO** provides data critical to a remote diagnosis.

[READ MORE >](#)

### Advanced Analytics

Data to predict component failure, monitor driver behavior and track vehicle health. Supports 3rd party analytics including Goodyear's tire intelligence and Intelematics' FailSAFE for predictive battery failure.

[DRIVER BEHAVIOR >](#)

The Voyomotive platform provides embedded vehicle data on par with OEM telematics systems that is ideal for scheduled maintenance, remote diagnostics and predictive analytics. Service and parts providers can automate processes for price quotation, scheduling and inventory management to increase throughput while reducing operating costs.



### Diagnostic Trouble Codes (DTCs)

VOYO with Scan Pro reads manufacturer and generic DTCs from all controllers on a vehicle. Reports include list of controllers and codes found, descriptions, symptom byte data, status and time/date/location code was set.



### Engine Health

VOYO reports data on vacuum/exhaust leaks, low fuel pressure and loss of compression that can cause poor fuel economy

or high emissions and before the problem is severe enough to set a DTC.

### Health Data Parameters

- Short Term Fuel Trims
- Long Term Fuel Trims
- Oxygen Sensor
- Air/Fuel Ratios
- Oxygen Sensor Voltages
- Oxygen Sensor Currents
- Engine Oil Temperature
- Coolant Temp.
- Fuel Economy
- Mass Air Flow
- MAP Sensor
- Engine Load
- Oil Pressure
- Oil Life



### Emissions Compliance

Readiness Monitors show when a vehicle has self-tested the emissions control system.

Readiness Monitors combined with DTCs and MIL status (Malfunction Indicator Lamp) determine if a vehicle is ready for testing or will fail.

### Readiness Monitors

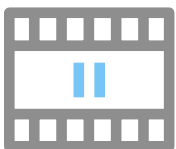
#### Spark Ignition

- EGR System
- Oxygen Sensor Heater
- Oxygen Sensor
- A/C Refrigerant
- Secondary Air System
- Evaporative System
- Catalyst / Heated

#### Compression Ignition

- EGR System
- PM Filter
- Exhaust Gas Sensor
- Boost Pressure
- NOx/SCR Monitor
- NMHC Catalyst

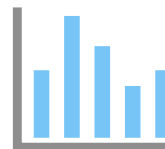
## ADDITIONAL SUPPORTED PIDS >



### Freeze Frame Data

In addition to advanced PIDs and DTCs, VOYO provides data critical to a remote diagnosis.

Exact operating conditions at the time of a fault helps determine why the fault happened and if it is likely to set again in the near future. Freeze frame data can also be used to identify intermittent problems that occur under specific conditions.



### Advanced Analytics

Health Data and Readiness Monitors can be used to predict component failure including catalytic converters, oxygen sensors, and fuel injectors.

In addition, Voyomotive's Lookout Alerts provide a range of analytics on vehicle health and driver. The platform also supports Goodyear's analytics for tire health and Intelmatic's FailSAFE for predictive battery failure.

**VOYO** OBD-II controllers adapt to specific vehicle architectures by make, model and year enabling communication with all vehicle controllers. **VOYO** reports up to 100 parameters including operating conditions, driver behavior, and weather. Other OBD-II devices typically report 5-15 generic parameters from a single controller. **VOYO** works on all vehicles built since 1996 and advanced data is available for vehicles from 2008 or newer. Remote lock/unlock and trunk actuation available on supported vehicles. The **VOYO** LTE controller is designed for fleet and consumer applications that require a direct network connection using an embedded cellular modem.

### OBD-II and CAN

- Supports all standard and many proprietary OBD-II protocols
- 5 CAN buses including single-wire CAN
- Capable of reading manufacturer-specific and raw bus data
- Configurable data parameters and rates

### GPS and Communication

- Global LTE Cat M1/NB1 with quad-band 2G fallback
- WiFi 802.11bgn, Bluetooth 4.2 dual-mode
- GPS/GLONASS/GALILEO/BEIDOU
- High-performance LDS antennas
- Standard GPS logging rate 1Hz
- OTA firmware updates

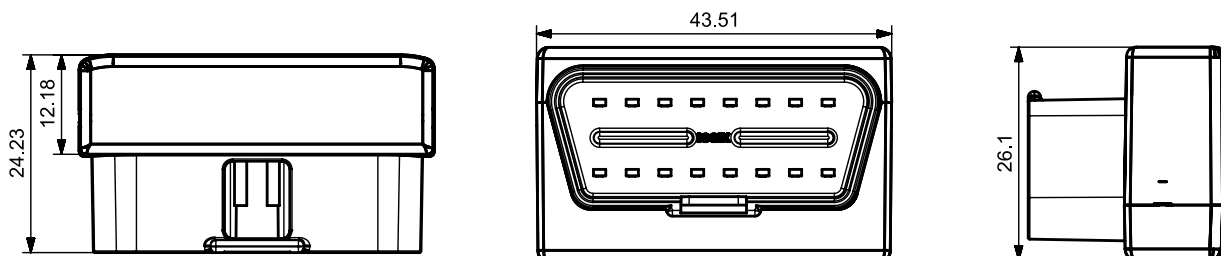
### Data Access and Edge Computing

- Able to access 2,000-15,000 operating parameters
- Threaded interface to simultaneously track 130 parameters
- Data transfer to 3rd parties using **VOYO** Web API and/or App API
- Edge computing capability to run custom code

### Others

- Dual-core 240MHz processor, 128MB storage
- 6-axis MEMS accelerometer at 20Hz
- Gyroscope, real-time clock and cabin temperature sensor
- Power Line Communication options for **VOYO** relays and 3rd party device integration
- OEM grade and certified interfaces
- PKI encryption with TLS 1.2 and 1.3 supported

The small **VOYO** form factor fits easily into most vehicles:



**VOYO** OBD-II controllers adapt to specific vehicle architectures by make, model and year enabling communication with all vehicle controllers. **VOYO** reports up to 100 parameters including operating conditions, driver behavior, and weather. Other OBD-II devices typically report 5-15 generic parameters from a single controller. **VOYO** works on all vehicles built since 1996 and advanced data is available for vehicles from 2008 or newer. Door lock/unlock and trunk actuation available on supported vehicles. The **VOYO** BTLE controller connects to the network using a cell phone (no additional service plan required) and is an excellent entry level option for consumer applications.

### OBD-II and CAN

- Supports all standard and many proprietary OBD-II protocols
- 5 CAN buses including single-wire CAN
- Capable of reading manufacturer-specific and raw bus data
- Configurable data parameters and rates

### GPS and Communication

- High-quality GPS receiver with integrated antenna and AGPS support
- Standard GPS logging rate 1Hz
- Data sent to the cloud using BTLE connection to a cell phone
- OTA firmware updates

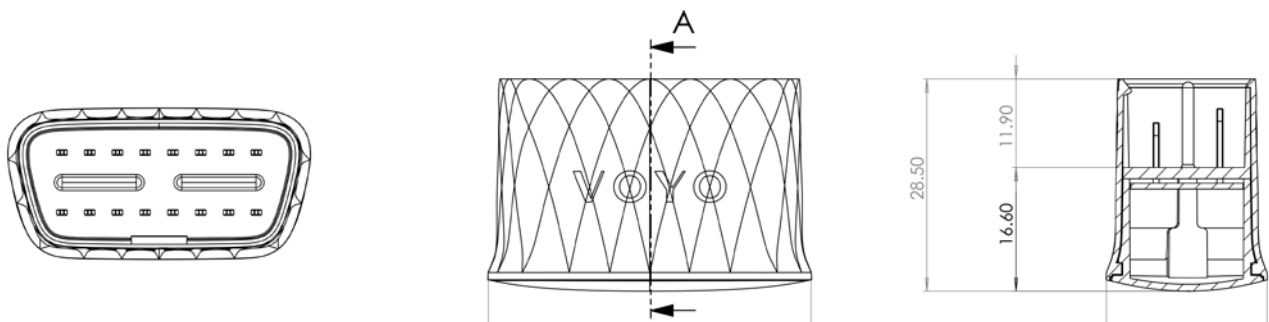
### Data Access and Edge Computing

- Able to access 2,000-15,000 operating parameters
- Threaded interface to simultaneously track 130 parameters
- Data transfer to 3rd parties using VOYO Web API and/or App API
- Edge computing capability to run custom code

### Others

- Onboard memory if not connected to network
- Real-time clock, cabin temperature sensor
- 3-axis MEMS accelerometer reports at 20Hz
- Power Line Communication options for VOYO relays and 3rd party device integration
- AES 256-bit encryption

The small **VOYO** form factor fits easily into most vehicles:



**VOYO** with Scan Pro reads proprietary Diagnostic Trouble Codes (DTCs) from all of a car's controllers just like a professional scan tool. Codes are scanned remotely and in real time once per minute during vehicle operations. Instant alerts can be received in the **VOYO** app, sent by SMS/email, or integrated into a partner mobile app and fleet management system. The platform provides additional valuable data related to service & repair including PIDs for engine health, emissions readiness, MIL status and freeze frame data. Other important data includes odometer, remaining oil life, and analytics for tire and battery health. The customizable parameters reported by **VOYO** include manufacturer data and are ideal for predictive analytics applications.



**Control Panel**



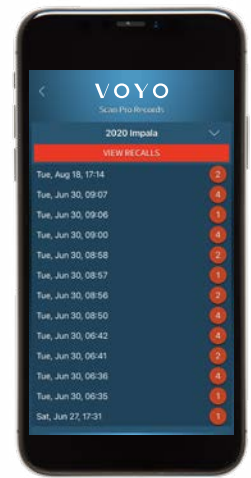
**Active Scan**



**Code Summary**



**Code Details**



**Scan History**

**Find Hidden Problems Early** – Scan Pro reads 5x more codes than standard OBD-II devices which only read generic codes from the ECU. Scan Pro reports the type and number of controllers and lists codes by controller. The app provides advanced data such as code description and status, symptom data and time/date set. Scan Pro often reports problems before the check engine light comes on.

**Automate Service and Repair** – Remotely detecting and reporting advanced diagnostics provides new opportunities across the automotive service sector. Current practices for price quoting, service scheduling and parts ordering can be automated to benefit both consumer and fleet solutions. 3rd party options are available for predictive failure analytics.

**Broad and Growing Coverage** – Scan Pro is supported for over 160 million vehicles in the USA and Canada built since 2008, including all models of GM, Ford, Toyota, Nissan, Honda, Fiat Chrysler, Mazda, Subaru, Hyundai, and KIA. Coverage for additional European manufacturers is planned for 2021. Generic diagnostics read from the ECU are available for all vehicles built since 1996.

Lookout Alerts provide real time warnings to drivers, vehicle owners and fleet managers when a problem has occurred that requires immediate attention.

These alerts are based on embedded vehicle data combined with **VOYO** controller and cell phone sensor information processed by analytics run in the Voyomotive cloud. The application determines when a vehicle is left in an unsafe condition, driven unsafely or experiences a malfunction.

Currently, the application supports up to 18 alerts including engine left running, door/trunk left open, lights left on, safety system activation or if a diagnostic code is set.

**VOYO** with Lookout Alerts is a powerful tool for fleet managers to monitor vehicle readiness and driver behavior. The application can also be included as a feature in consumer mobility apps.

### VEHICLE SAFETY

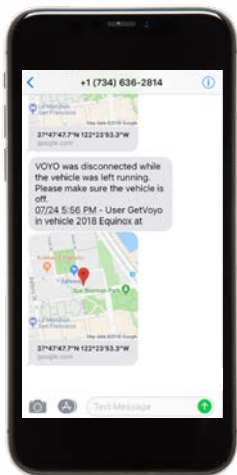
- Engine Left Running
- Auxiliary Mode Left On
- Unauthorized Entry
- Headlights Left On
- Interior Light Left On
- Door/Trunk Left Open
- Hood Left Open

### DRIVER BEHAVIOR

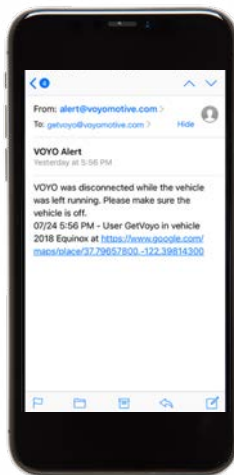
- Anti-Lock Brakes
- Traction Control
- Stability Control
- Swerving
- Hard Braking
- Speeding
- Seat Belt

### VEHICLE HEALTH

- Goodyear Tire Health  
Pressure  
Temperature  
Leaks
- FailSAFE Battery Health
- Manufacturer DTCs
- Generic DTCs



SMS



EMAIL



IN-APP

Lookout Alerts are sent by SMS and email or integrated into an ERP system. Alerts are also displayed in the **VOYO** app and include time and location of alert and vehicle operating status.

Additional alert meta data can include vehicle speed, accelerator/brake pedal position, and event duration.



# Mobile App for Consumers & Small Fleets

The **VOYO** app is designed for consumers and small fleets. Based on OEM level telematics, the app includes many of the advanced features offered on the VOYO platform. Options are available to partners to include a combination of equivalent features in their branded mobility apps.

## KEY OPERATING DATA

Monitor tire pressure, oil life, fuel level, odometer, and battery health

## LOOKOUT ALERTS

Up to 18 real time safety and malfunction warnings including driver behavior

## SCAN PRO DIAGNOSTICS

Read manufacturer trouble codes from all car controllers

## VEHICLE ACCESS

Lock/unlock doors and trunk; use Autokey for handsfree operation

## APP DATA SHARING

Information and alerts shared with multiple users in-app, by SMS or email

## CODE DESCRIPTIONS

Consumer level descriptions and fixes accessed within app

## TRACK TRIP DATA

Display routes and track time driving, mileage, and fuel use trip by trip

## FLEET VIEW

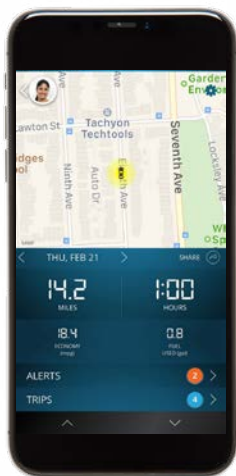
Monitor a network of cars in real time from a single screen, by vehicle or driver

## MORE CAR HEALTH

Clear codes; review historic scan records and official recall notices



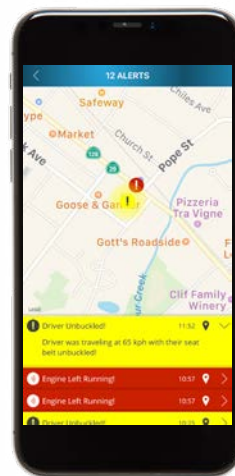
Operating Data & Vehicle Control



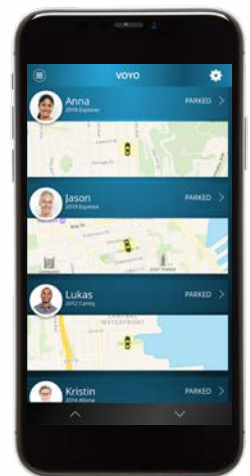
Location & Driving Data



Scan Pro & Recall Data



Lookout Alerts



Vehicle Dashboard

Admin vs. User policies

AES 256-bit encryption

READ MORE HERE

[VOYO.io >](https://VOYO.io)

OR CONTACT THE TEAM

[CONTACT >](#)





[www.voyo.io](http://www.voyo.io)