

SERVICE-ORIENTED  
VEHICLE  
DIAGNOSTICS  
WHITEPAPER

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OPUS IVS

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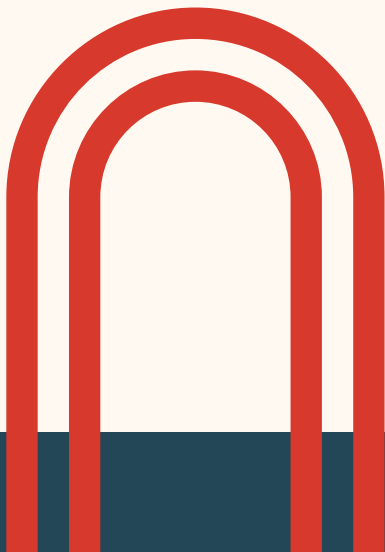
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# OVERVIEW

- On its face SOVD is a dynamic distribution of vehicle module data sets
- GOAL:
  - Simplifies the data set distribution by including it with the module instead of separately
  - Standardizes the distribution model using a txt-based command / request exchange
  - Allows dynamic distribution of data sets
  - Allow for more specific control through procedures as opposed to sending bytes
  - SOVD accomplishes this by using a defined exchange language that allows for the transmission of data sets. More specifically an exchange of functions and features for a vehicle module
- Motivation for SOVD is the large data sets for HPCs and large module sets

# CARMAKERS SUPPORTING SOVD

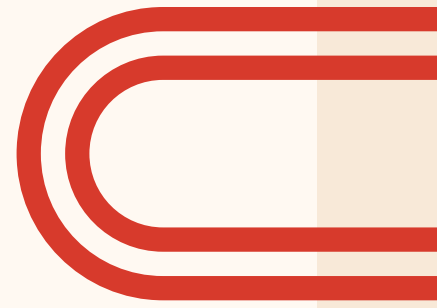
- Audi
- BMW
- Mercedes-Benz
- Ford
- Jaguar Land Rover
- General Motors
- Porsche
- Volkswagen



# HOW DOES SOVD WORK

- By using a specific set of HTTP / REST and JSON commands and arrays a user can communicate with a vehicle's module on a CAN bus
- The vehicle module will populate the request with answers to the queries. After using this mechanism, a user can build a feature and function set for that module
- Finally, OAUTH / SGW would control offline access

# SOVD BLINDSPOTS



- **Standards Aren't Always A Standard**

Like all standards these seem to take a while for the implementation to "standardize". we saw this ODX and Excel data set distributions. For example, ODX files would require tools that the oe used because their ODX implementation isn't compatible with another. in the Excel case, we would see various columns and rows and languages intermixed and/or not consistent between data sets or even distributions.

Again, SOVD does define an exchange interface that should prevent most of these concerns. But that hasn't materialized with any new technology I've seen. History is not on our side on this argument.

- **Language Implementations**

How are we to resolve multiple languages or translation issues. For example, the data stream we are getting has typos or regionally incorrect terminology. What will be done with languages not translated?

# SOVD HEADWINDS



SOVD requires specific technologies that are at the center of legal challenges.

## SOVD BAKES IN SGW AND CRYPTO

SOVD requires it. In the past, when data streams were distributed, they would be sent to paying and vetted ETI members that are in Good Standing. There was a level of vetting the consumer of the data.

In the case of SOVD the module will contain the entire feature and function set for the module. That means, if you sell 6 million cars, you have six million possible breaches. The exposure of the data stream distribution requires a security mechanism that is very robust. A vehicle offline is simply exposed to a brute force attack. For all practical purposes you would want something online like an SGW; and, even more robust, would introduce the addition of a Mode 27 lock.

## DCMA / RIGHT TO REPAIR

DCMA / Right to Repair are challenging SGWs. If either of these succeed a critical component of SOVD is removed making it untenable