Column Name	SID (Mode ID in hex)	PID (Parameter ID in hex)	Description of Data	Value Range or Value Type	Expected Format of Data to Output File	Example output	Additional Requirements
Data Source Information							
SESSION_ID	N/A	N/A	The unique ID of the current "Smog Check" test being performed.	16 character GUID supplied by calling function. (all chars are ASCII 48-57 and 97-122)	ASCII text	3ca851c0920b6190	
VIN_INPUT	N/A	N/A	The VIN of the vehicle as passed to the OBD-II module from the VID. This value may be blank and may not coincide with the SID $09 PID $02 value.	Variable length or blank. Shall not contain any spaces.	ASCII text	1BAB457YH30123456	
PROTOCOL	N/A	N/A	The protocol the vehicle uses. Determined by attempting communication with the vehicle with a SID $01 PID $00 request.	JPWM1850, JVPW1850, I9140808, I9149494, ICAN11bt, ICAN29bt, "KWPS" followed by the hex keywords (key byte 2 then key byte 1) without a space (e.g., "KWPS8FE9"), "KWPF" followed by the hex keywords (key byte 2 then key byte 1) without a space (e.g., "KWPF 8F6B")	ASCII text	JVPW1850	
BUS_VOLTAGE	N/A	N/A	The BUS voltage found on pin 16 of the OBD-II connecter	-24.0 to +24.0 Volts	ASCII text	12.4	Accuracy to 1/10 of a volt.
ECU_LIST	N/A	N/A	Hex address of each ECU that responds to a Mode $01 PID $00 request, ordered from address of ECU with highest Mode $01 PID Count	00-FF for one byte addresses, 07E8-07EF for two byte addresses, delimited by 'Vertical Bar'	Hex represented as ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	07E9|07E8 (two byte addresses) or 10|0A|41 (one byte addresses)	
ECU1_ADDR	N/A	N/A	hex address of ECU with highest Mode $01 PID Count	00-FF for one byte addresses, 07E8-07EF for two byte addresses	Hex represented as ASCII	07E9	
ECU2_ADDR	N/A	N/A	hex address of ECU with second highest Mode $01 PID Count	00-FF for one byte addresses, 07E8-07EF for two byte addresses	Hex represented as ASCII	17	
ECU3_ADDR	N/A	N/A	hex address of ECU with third highest Mode $01 PID Count	00-FF for one byte addresses, 07E8-07EF for two byte addresses	Hex represented as ASCII	0A	
Mode 1 (0x01)							
ECU1_PID_COUNT	0x01	0x00,20,40,60,80,A0,C0,E0	decimal count of Mode $01 PIDs supported for ECU with highest count	0-255	Decimal number as text string	46	
ECU2_PID_COUNT	0x01	0x00,20,40,60,80,A0,C0,E1	decimal count of Mode $01 PIDs supported for ECU with second highest count	0-255	Decimal number as text string	23	
ECU3_PID_COUNT	0x01	0x00,20,40,60,80,A0,C0,E2	decimal count of Mode $01 PIDs supported for ECU with third highest count	0-255	Decimal number as text string	2	
ECU1_PID_LIST	0x01	0x00,20,40,60,80,A0,C0,E3	Hex, represented as ASCII, list of Mode $01 PIDs supported by ECU with highest PID count	01-FF per PID, delimited by "Vertical Bar" (ASCII character 0x7C)	(hex)|(hex)|(hex)|...	01|03|04|0A|11|1C|20|2F	
ECU2_PID_LIST	0x01	0x00,20,40,60,80,A0,C0,E4	Hex, represented as ASCII, list of Mode $01 PIDs supported by ECU with second highest PID count	01-FF per PID, delimited by "Vertical Bar" (ASCII character 0x7C)	(hex)|(hex)|(hex)|...	01|07|08|0A|11|1C	
ECU3_PID_LIST	0x01	0x00,20,40,60,80,A0,C0,E5	Hex, represented as ASCII, list of Mode $01 PIDs supported by ECU with third highest PID count	01-FF per PID, delimited by "Vertical Bar" (ASCII character 0x7C)	(hex)|(hex)|(hex)|...	01|05	
SID01_P1_DTCS	0x01	0x01	Number of emission-related DTCs stored in ECU	(decimal) 0-127 of Byte A bits 0-6	Decimal number as text string	3	Consolidated from all ECUs responding.
SID01_P1_MIL	0x01	0x01	Malfunction Indicator Lamp (MIL) Status	ASCII text	If value is 0 then field shall contain "MIL_OFF". If value is 1 the field shall contain "MIL_ON".	MIL_OFF	Consolidated from all ECUs responding. If any ECU responds with [value]=1 then overall is 1.
SID01_P1_SUPPORT	0x01	0x01	Consolidated VEHICLE readiness	ASCII text	12 Text Characters. Each character represents the status of each Monitor. "U" for unsupported, "C" for Completed, "I" for Incomplete. In the case of the "Compression ignition monitoring support," spark ignition will report a "U" and compression ignition shall report a "C".	CCCUICUCUUCU	See the DAD Specification for details.
SID01_PID0C	0x01	0x0C	Engine RPM	0 to 16383.75	converted per SAE J1979 to rpm and reported as a decimal number as text string	760	From the ECU with the highest PID count. The median value over a 5 second period.
SID01_PID0C_MIN	0x01	0x0C	Minimum Engine RPM observed from ECU with highest PID count during 5 sec continuous (as fast as possible) monitoring of engine rpm	0 to 16383.75	converted per SAE J1979 to rpm and reported as a decimal number as text string	752	From the ECU with the highest PID count. Minimum value over a 5 second period.
SID01_PID0C_MAX	0x01	0x0C	Minimum Engine RPM observed from ECU with highest PID count during 5 sec continuous (as fast as possible) monitoring of engine rpm	0 to 16383.75	converted per SAE J1979 to rpm and reported as a decimal number as text string	794	From the ECU with the highest PID count. Maximum value over a 5 second period.
SID01_PID1C	0x01	0x1C	OBD requirements to which the vehicle or engine is certified	01-FF	Hex represented by ASCII. See SAE J1979 SEP2010 Spec.	0B	From the ECU with the highest PID count.
SID01_PID21	0x01	0x21	Distance Traveled While MIL is Activated	decimal 0-65535	converted to kilometers per SAE J1979 and reported as decimal number as text string	3764	From the ECU with the highest PID count.
SID01_PID30	0x01	0x30	Number of warm-ups since codes cleared from ECU with highest PID count	decimal 0-255	converted per SAE J1979 and reported as a decimal number as text string	75	See the DAD Specification for details.
SID01_PID31	0x01	0x31	Distance Traveled since codes cleared from ECU with highest PID count	decimal 0-65535	converted per SAE J1979 to kilometers and reported as a decimal number as text string	1245	See the DAD Specification for details.
SID01_PID4D	0x01	0x4D	Engine run time while MIL is activated	decimal 0-65535	converted per SAE J1979 to minutes and reported as a decimal number as text string	3600	See the DAD Specification for details.
SID01_PID4E	0x01	0x4E	Engine run time since DTCs cleared	decimal 0-65535	converted per SAE J1979 to minutes and reported as a decimal number as text string	3600	See the DAD Specification for details.
Mode 3 (0x03)							
SID03	0x03	N/A	Request Emission-Related Diagnostic Trouble Codes	ASCII plus Hex represented as ASCII, from P0000 to P39FF, also U, B, or C in lieu of P	First two digits are ASCII alphanumeric designator (e.g. P0, U0, B1, or C2), Hex as ASCII for next three digits, each code is delimited by "Vertical Bar" (ASCII character 0x7C)	P0120|U0010	All DTCs from ALL ECUs.
Mode 6 (0x06)							
SID06_TID00	0x06	0x00,20,40,60,80,A0,C0,E0	Test Result Support from ECU with highest PID count for Test Identification (TID) and Component Identification (CID) or OBD Monitor Id (OBDMID) and TID	2 byte Hex values, represented as ASCII, for each supported TID and CID pair (or OBDMID and TID pair) separated by "Forward Slash" and delimited by "Vertical Bar" (ASCII character 0x7C)	tid/cid1|tid/cid2|OBDMID/TID1|...	01/05|01/0A|03/10	See the DAD Specification for details.
Mode 9 (0x09)							
SID09_IT02	0x09	0x02	Vehicle identification number (VIN)	See SAE J1979 SEP2010 Spec.	See SAE J1979 SEP2010 Spec.	1BAB457YH30123456	See the DAD Specification for details.
ECU1_SID09_IT04	0x09	0x04	Calibration Identification (CAL ID) from ECU with highest PID count, reported in same order as received from that ECU	ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CALID1|CALID2|CALID3|...	345K74.HEX|2345K75*J8|765AA	From the ECU with the highest PID count. All of the CAL IDs for the ECU. See the DAD Specification for details.
ECU2_SID09_IT04	0x09	0x04	Calibration Identification (CAL ID) from ECU with second highest PID count, reported in same order as received from that ECU	ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CALID1|CALID2|CALID3|...	345K74|0116223|765AB	From the ECU with the 2nd highest PID count. All of the CAL IDs for the ECU. See the DAD Specification for details.
ECU3_SID09_IT04	0x09	0x04	Calibration Identification (CAL ID) from ECU with third highest PID count, reported in same order as received from that ECU	ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CALID1|CALID2|CALID3|...	J388VER	From the ECU with the 3rd highest PID count. All of the CAL IDs for the ECU. See the DAD Specification for details.
ECU1_SID09_IT06	0x09	0x06	Calibration Verification Number (CVN) from ECU with highest PID count, reported in same order as received from that ECU	Hex represented as ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CVN1|CVN2|CVN3|...	34FC01|123BBB|70A9245	A vehicle could have as many as 8 ECUs reporting CVNs and up to 8 CVNs per ECU. All CVNs from the ECU with the highest PID count. See the DAD specification for details.
ECU2_SID09_IT06	0x09	0x06	Calibration Verification Number (CVN) from ECU with second highest PID count, reported in same order as received from that ECU	Hex represented as ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CVN1|CVN2|CVN3|...	4560D0D|4567AB|9823	All CVNs from the ECU with the 2nd highest PID count. See the DAD specification for details.
ECU3_SID09_IT06	0x09	0x06	Calibration Verification Number (CVN) from ECU with third highest PID count, reported in same order as received from that ECU	Hex represented as ASCII delimited by "Vertical Bar" (ASCII character 0x7C)	CVN1|CVN2|CVN3|...	454689	All CVNs from the ECU with the 3rd highest PID count. See the DAD specification for details.
ECU1_SID09_IT0A	0x09	0x0A	ECU Name from ECU with highest PID count	ASCII text	converted per J1979 to ASCII text	ECU-Engine Control Unit	
ECU2_SID09_IT0A	0x09	0x0A	ECU Name from ECU with second highest PID count	ASCII text	converted per J1979 to ASCII text	TCU-Transmission Control Unit	
ECU3_SID09_IT0A	0x09	0x0A	ECU Name from ECU with third highest PID count	ASCII text	converted per J1979 to ASCII text	HCM-Hybrid Control Mod	
SID09_IT08	0x09	0x08	In-use monitoring performance data from ECU with highest PID count	Hex represented as ASCII	Data bytes #4 through #m per SAE J1979 reported in Hex as ASCII	0A10423B0A10423B0A10423B0A10423B0A10423B0A10423B0A10423B	See the DAD Specification for details.
Mode 0A (0x0A)							
SID0A	0x0A	N/A	Request Emission-Related Diagnostic Trouble Codes with Permanent Status	ASCII plus Hex represented by ASCII, from P0000 to P39FF, also U, B, or C in lieu of P	First two digits are ASCII alphanumeric designator (e.g. P0, U0, B1, or C2), Hex as ASCII for next three digits, each code is delimited by "Vertical Bar" (ASCII character 0x7C)	P0120|U0010	All Permanent DTCs from ALL ECUs.

DAD Summary Static Data File Requirements

File Name

The file name of the Summary data file shall contain the 16 character GUID supplied by calling function. (all chars are ASCII 48-57 and 97-122) and have the text "_SUM" appended at the end of the GUID. The files extension shall be three characters only.

Examples:
c7a93487b68d6d10_SUM.csv
4018204dbd519d20_SUM.csv

File structure

Data header (First line of file):
The first line of the file shall contain the column names as specified in column A "Column Name". The line shall NOT contain any spaces or commas in the field names. The line shall be comma delimited between column names.

Data line of the file:
The data line of the file shall be a summary of some of the data retrieved from three or less of the vehicle's ECUs with the highest PID count. The OBD-II summary data shall be formatted as outlined in columns B through G.

General File Requirements

The file shall be a standard "CSV" file that is compatible with Microsoft Excel 2003/2007/2010.

No data within the file may contain commas (","). Commas must only be used as delimiters at the file level.

No data shall contain a "space" (ASCII char 32) unless that data is a string value per the SAE J1979 SEP2010 specification and that data contains a space character. i.e. a VIN with a space in it. A space or comma may NOT be used to delimit DTCs in mode $03, $07, and $0A. There shall be no delimiter.

Data fields that do not contain values should contain the appropriate code such as "NS", "NR", as per this specification.

Definitions
ASCII text -- reported as ASCII characters A-Z, 0-9, etc. per hex to ASCII conversion table e.g., hex 4D (0x4D, $4D) converts to ASCII character M
hex represented as ASCII -- the hex number in ASCII characters e.g., hex 4D (0x4D or $4D) reported as 4D
decimal number as text string-- reported as the decimal value per hex to decimal conversion table and/or SAE J1979 specifications e.g., hex 4D (0x4D, $4D) converts to decimal 77