

CONCERTO M.O.V.E IN VEHICLE DATA EVALUATION PLATFORM

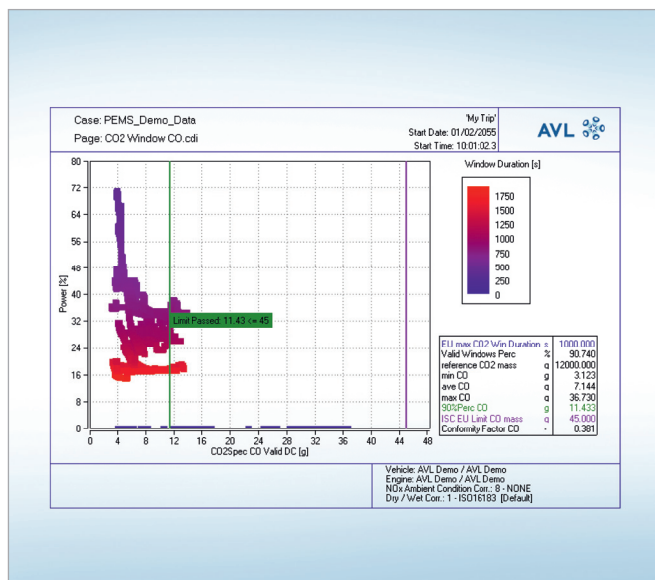
Market Requirements

The wide range of different development and certification tasks within the vehicle development leads to a high variety of measurement data. Various data sources and data formats form a complex data structure.

As a new approach AVL M.O.V.E ensures the use of same measurement principles and software tools within different environments. This helps to reduce the variety of test data. Nevertheless a huge amount of data is produced by other systems which are not using the same standards. To handle this data variety a open post processing platform is essential for keeping the post processing effort at a reasonable level. In some cases standardized and automated processing routines and a test report generation is a must. CONCERTO M.O.V.E post processing fulfils this needs.

Generic Postprocessing

AVL CONCERTO M.O.V.E is a post processing platform for automotive applications. It's flexibility allows to import all automotive file formats in a very easy way. Due to the open structure in built functionality can be extended via macro and script programming. An application guided workflow supports fast and efficient data post processing and allows a standardization of templates. For legislative data post processing special options are available to evaluate the test data according to the legislative rules. Input data might be corrected manually or calculated from other quantities. There are lots of features for the calculation of special results, data visualisation, time alignment of input channels or data consistency checks. Calculation and reporting is implemented via macros and scripts. This allows customer specific pre calculation or additional reporting.



Case: PEMS_Demo_Data
Page: Work Window

My Trip
Start Date: 01/02/2055
Start Time: 10:01:32.3

AVL

Reference Work	kWh	30.00	Points total	-	10891.00
EU Power Threshold	%	20.00	Data Coverage No.	-	10891.00
min Power	%	20.00	Data Coverage Perc	%	100.00
max Power	%	71.07	Work Windows total	-	8618.00
Conformity Factor GAS	-	1.50	Valid Windows No.	-	7470.00
Conformity Factor Particles	-	2.00	Valid Windows Perc	%	77.67

ave BS CO	g/kWh	0.52	ave BS HC+NOx	g/kWh	2.36	ave BS Soot	g/kWh	0.03
min BS CO	g/kWh	0.21	min BS HC+NOx	g/kWh	2.04	min BS Soot	g/kWh	0.01
max BS CO	g/kWh	1.64	max BS HC+NOx	g/kWh	4.58	max BS Soot	g/kWh	0.06
90%Perc BS CO	g/kWh	0.76	90%Perc BS HC+NOx	g/kWh	4.19	90%Perc BS Soot	g/kWh	0.04
EU Limit CO	g/kWh	1.00	EU Limit HC+NOx	g/kWh	1.00			
Conformity Factor CO		0.30	Conformity Factor HC+NOx		0.35			

ave BS NOx	g/kWh	2.75	ave BS NMHC	g/kWh	0.21	ave BS Soot Mean	g/kWh	0.03
min BS NOx	g/kWh	1.82	min BS NMHC	g/kWh	0.02	min BS Soot Mean	g/kWh	0.01
max BS NOx	g/kWh	4.01	max BS NMHC	g/kWh	0.41	max BS Soot Mean	g/kWh	0.06
90%Perc BS NOx	g/kWh	3.82	90%Perc BS NMHC	g/kWh	0.37	90%Perc BS Soot Mean	g/kWh	0.04
EU Limit NOx	g/kWh	1.00	EU Limit NMHC	g/kWh	1.00			
Conformity Factor NOx		0.35	Conformity Factor NMHC		0.37			

ave BS THC	g/kWh	0.21	ave BS PM	g/kWh	0.09	ave BS CH4	g/kWh	0.00
min BS THC	g/kWh	0.02	min BS PM	g/kWh	0.02	min BS CH4	g/kWh	0.00
max BS THC	g/kWh	0.42	max BS PM	g/kWh	0.10	max BS CH4	g/kWh	0.01
90%Perc BS THC	g/kWh	0.38	90%Perc BS PM	g/kWh	0.07	90%Perc BS CH4	g/kWh	0.01
EU Limit THC	g/kWh	1.00	EU Limit PM	g/kWh	1.00			
Conformity Factor THC		0.38	Conformity Factor PM		0.09			

ave BS CO2	g/kWh	638.72	ave BS CO2	g/kWh	1083.91
min BS CO2	g/kWh	638.10	min BS CO2	g/kWh	1028.65
max BS CO2	g/kWh	1083.91	max BS CO2	g/kWh	1028.65
90%Perc BS CO2	g/kWh	1028.65	90%Perc BS CO2	g/kWh	1028.65

Vehicle: AVL Demo / AVL Demo
Engine: AVL Demo / AVL Demo
NOx Ambient Condition Cat: 8 - NONE
Dry / Wet Corr.: 1 - ISO11813 (Default)

Legislative Evaluation

Neue Upcoming emission legislation scenarios force the OEM's to test their vehicles in use. This means that they have to measure the emissions under real driving conditions. After this test they have to report the emission performance to the legislative authority. Therefore different approaches and rules are in force. Beside the emissions also ambient conditions, GPS data, exhaust mass flow and vehicle ECU data need to be recorded. Depending on the region (US or EU) the requirements for data post processing and reporting differ. AVL CONCERTO M.O.V.E contains all this different algorithms and reporting options. If the investigations are carried out with AVL M.O.V.E all values are stored in the same file format. This allows to reduce the effort for post processing to a few mouse clicks. Time alignment and drift compensation is done automatically. One measurement can easily be evaluated according to different legislation rules. All relevant results are displayed in predefined layouts. This helps to get a fast and informative overview of the test results (US EPA NTE evaluation or EU in service conformity). For US EPA a special report generator automatically creates reports according to the legislative requirements. These reports can be handed over to the legislative authority via an upload onto the EPA server.

R&D Evaluation

Like in legislative emission testing post processing is also a very important topic in the area of vehicle R&D. Huge varieties of different data need to be evaluated. Especially for vehicle calibration tasks the engineer needs to have quick access to different data (e.g.: ECU values, emissions, consumption and combustion results). CONCERTO M.O.V.E has an open data explorer which allows an easy import of all common automotive file formats without any conversion. Powerful data display functions support creating new plots by drag and drop. The display objects support powerful interactive zooming and context sensitive menus. For the user guidance through the application a use case oriented workflow is applicable. Furthermore the use of uniform protocols and layouts allows a kind of standardization. Especially for in vehicle testing tasks Video and GPS data can be included in the evaluation. This allows to correlate each measurement result to the track and corresponding driving maneuver. To reduce the effort for manual operation powerful script and macro functions allow to automate complete post processing routines. The whole post processing environment is packed in a container (CONCERTO work environment). This work environment can easily be shared between different PC's. All this features make CONCERTO to the preferred data post processing tool in the automotive industry.

For further information please contact:

AVL List GmbH, Hans-List-Platz 1, A-8020 Graz, Austria
Phone: +43 316 787-0, Fax: +43 316 787-400, Email: info@avl.com, www.avl.com