

# volkswagen integrates asam cea in a measuring data management system

“The existing pool of java CEA components and the possibility to create new ones make this technology a promising IT solution for metrology.”

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## i Summary

The challenge the central metrology department of Volkswagen R&D had was to create a multitude of different measurement data import modules and corresponding graphical display modules, while keeping the modules flexible enough to reorganize the import-display-couples when needed - all with little effort.

The solution Volkswagen AG found, was to create all import modules as CEA data producers, create all display components as the CEA viewer and connect them together via the ASAM CEA bus. This was to be used in Volkswagen's Measuring Data Management (MDM) System.

The long term benefit of this approach is that of all component architectures in software technology: the reduction of costs in software development and software maintenance.

## ii Situation

The goal of the centralized measurement data management project at the central metrology department of Volkswagen R&D is the creation of the Measuring Data Management (MDM) System. Besides managing data, the MDM system also offers the option to evaluate certain data types. Eventually, the number of available evaluation modules increases gradually.

## iii Challenges faced

The challenge that Volkswagen has is that there are some 100 different measurement types which have to be handled by their MDM

system. In the long term, the number of needed evaluation modules may even be higher. A flexible evaluation system designed for reuse was needed, and the ASAM-CEA approach seemed to be a promising solution for this.

## iv Success strategy

The MDM System uses its evaluation modules as plug-ins which are loosely coupled to the system. The design resembles the popular eclipse plug-in architecture ([www.eclipse.org](http://www.eclipse.org)). This concept is similar to the pure CEA component concept but additionally offers the possibility to filter the components by the measurement data type which they feel responsible for. Therefore, only the needed plug-ins are loaded by the application. This is a great advantage in terms of performance and memory usage.

There were no serious technical problems. Securing financial support for this project was a bit difficult, but definitely worth it.

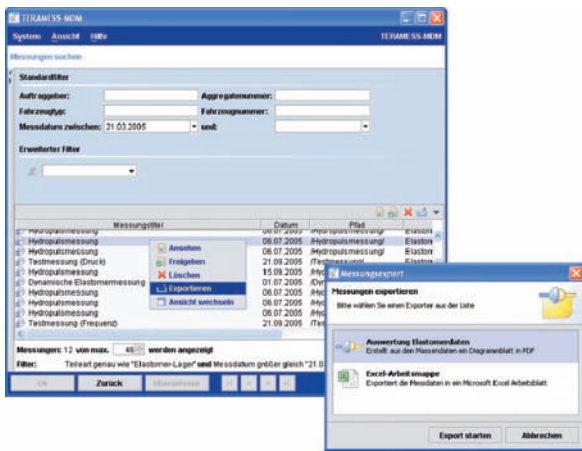
To continue our success, we hope there is an increasing demand for new evaluation components by customers because of the ease of use of the MDM system. As the number of components increases gradually, we have more of a variety to be a success.

## v Benefit

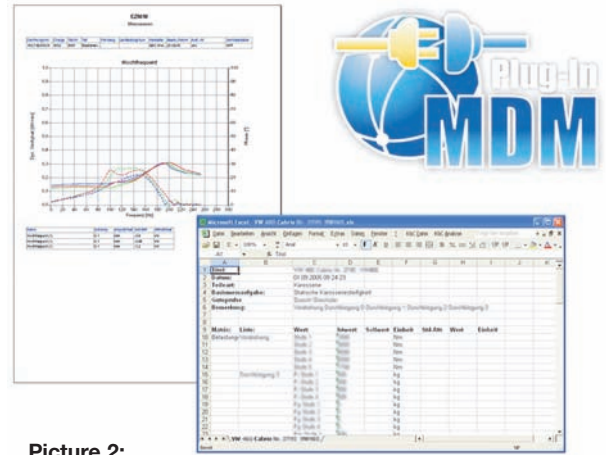
A key benefit of this solution is that the loose component coupling over the CEA bus offers the option to use components several times in different evaluation situations. For example, a once written import module can serve more than only one special display module.

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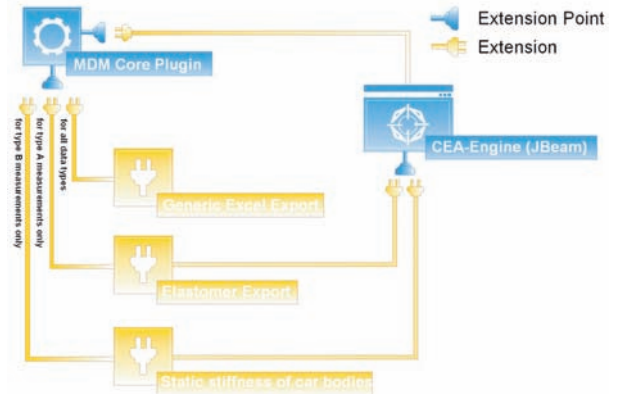
Therefore, the long term benefit of this approach is that of all component architectures in software technology: the reduction of costs in software development and software maintenance. Given a large enough number of components, this benefit compensates the increased effort for fulfilling the demands of the component model.



**Picture 1:** In the background: The MDM search window with a selected measurement. In the Foreground: The export dialog offering two matching export modules for the selected measurement.



**Picture 2:** Two export results. On the left: A line chart created using ASAM-CEA. On the right: An Excel export containing the measurement's data.



**Picture 3:** A look on how the MDM plugin approach uses the ASAM-CEA components concept.

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