CAVA

TRANSCAT

Solutions for car design and legal compliance in CATIA V5

The cost of non-compliance is high in the automotive industry, resulting in emergency remedies of redesign, re-qualification and retesting. Man-months of non-value-added time and cost can be added to vehicle programs. Today's OEMs & Suppliers must manage multiple government regulated standards but this task of complying with international regulations is cumbersome and fraught with risk. CAVA has been developed by Transcat Software in conjunction with the German CATIA OEMs, to reduce the risks of non-compliance and help ensure global regulations are met.

Value of compliance management

CAVA enables the reduction of noncompliance costs by preventing rework due to inconsistent interpretation and mismanagement of global regulations. CAVA also ensures implementation of corporate standards. CAVA automates over 120 critical standards checks to ensure products meet global standards and to eliminate the burden of manual checks and the risk of missed items. CAVA ensures legal conformity of the architecture during the entire creation process, allowing companies to get designs right the first time. Both OEMs and suppliers benefit from the CAVA functionality.

Collaboration with OEMs

CAVA was developed in cooperation with German car manufacturers. The goal was to develop technology that will ensure different international rules, norms and standards are followed during the entire design process.

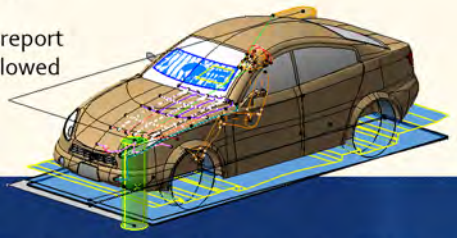
Easy to use features

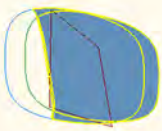
CAVA offers a complete set of easy to use features. More than 40 features contain up to 10 standards or standard groups, including: rear view mirror, viewing fields, security belts, under floor clearances, lamp positions, pedestrian protection, and much more. Each function contains the different values and settings that are determined by local authorities and described in norms like: ECE, EWG, SAE, FMVSS and others.
These pre-configured standards are built into CAVA and can easily be administered and extended to company-specific settings.

Design integrated

In general CAVA provides two main benefits. First, CAVA creates reference or help geometry representing design space, clearance areas and fields of vision required to support draft and design. Second, with this geometry generated from the established standards, any existing or new geometry can be verified. With these capabilities, CAVA is very useful through the entire development process of a car:

- During the draft phase to provide the boundaries for several design aspects
- During the entire design to automatically check for legal conformity and report deviations Before homologation to validate that standards have been followed and to create required reports.





Founded in 1987, Transcat PLM GmbH is a solution supplier in the Product Lifecyle Management (PLM) sector. From the very beginning Transcat PLM was more than just a reseller of Dassault Systèmes' product suite around CATIA, but a solution provider. Wherever applications were required to guarantee a successful process implementation of CATIA, Transcat was the right partner to develop new software solutions.

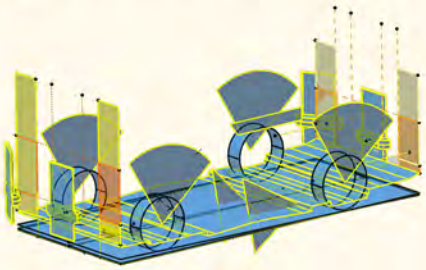
Already in the early 90's Transcat PLM was successful with the VDA-Checker, a sophisticated product to analyze models conformity regarding the geometrical quality requirements defined in the VDA 4955.

Transcat Software continues to concentrate on mission critical products around CATIA and related solutions, like Enovia. Within our two development centers located in Germany and Slovakia, highly educated developers are creating new PLM technology. Both, products and individual solutions, result from our customer focused mode of operation. Impelmentation and consulting services complete our offering.

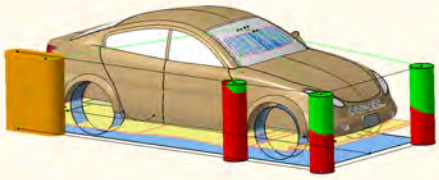
Global process integration

The CAVA architecture supports the entire process chain including the data created by the embedded supply chain. Through a tight integration to CATIA, CAVA features can be automatically interchanged with CATIA data so that suppliers and OEMs can use these features throughout the design process.

CAVA OVA - Overall Vehicle Architecture



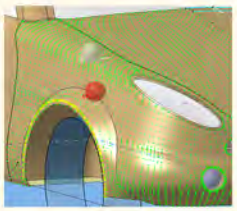
At the start of the design process detailed geometry for the vehicle typically is not present. The definitive vehicle parameters, such as dimensions and seat positions, are still subject to alteration. CAVA offers a wide range of options to quickly and visually verify the various (legal) requirements applicable to vehicle design.



CAVA Vision

There are numerous requirements requiring compliance related to driver direct and indirect vision. The influence that geometry has on the driver's field of vision can be easily investigated with CAVA Vision. Questions such as 'will the vehicle still fulfill the requirements for A-pillar obstruction if the SRP (Seating Reference Point) is changed slightly' are readily answered.

CAVA Safety



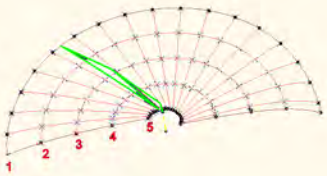
The direct safety of passengers and pedestrians plays a major role in the development of new vehicles. CAVA Safety provides features to analyze the bonnet and windscreen for pedestrian safety and interior points to address head impact. Support geometry is created within CATIA and reports are available on critical areas early in the process.

CAVA Manikin

Within the sphere of ergonomics, SAE standards specify a two-dimensional test dummy for use in determining passenger positions. The dummy can be positioned to the geometric guidelines or specifications for the angle of the body and relevant parameters. Using the contours of the head position and the eye view points and ellipses, all relevant SAE parameters such as headroom or legroom can be verified.

CAVA Wiper

With CAVA Wiper, the user can simulate the geometry of the wipers and determine the wiped area on the windscreen. Used together with the 'Field of View' feature in CAVA Vision, it is possible to check the percentage of wiped area within the field of view. Up to three wipers can be simulated within one feature.



CAVA Tools – Silhouette

The Silhouette function is offering the possibility to project the silhouette of any selected geometry to a target plane. Thus, helping to create homologation drawings and the frontal area of the car for a drag coefficient calculation. The Silhouette function is also suitable for applications beyond car design – coming in handy whenever generating a projection of multiple geometry or CGR elements becomes necessary.

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