TECHNIA
ADDNODE GROUP

LiteCar
Vehicle Homologation

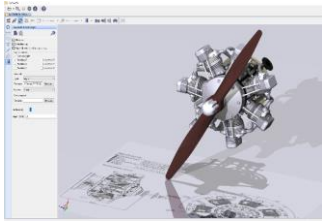
EXPERIENCE MATTERS

01-2020

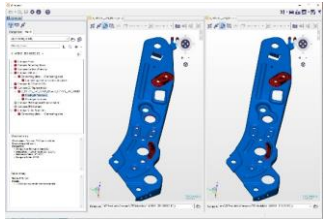
TECHNIA
ADDNODE GROUP

Professional JT portfolio driven by customer input with solid release cycle

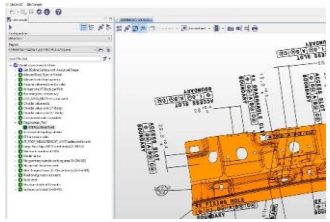
ISO based own JT toolkit with full control and best performance



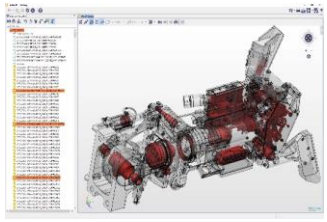
LiteBox3D
Desktop and Web Viewing



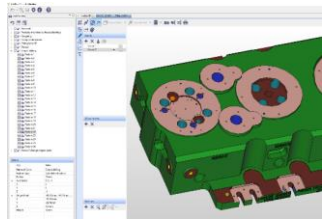
xCompare
Validation



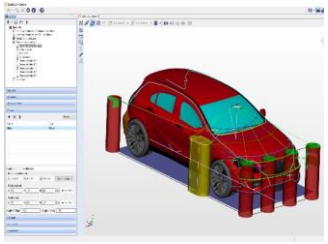
LiteComply
Data Quality



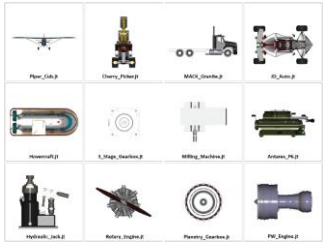
LiteDrop
Data Simplification & IP Protection



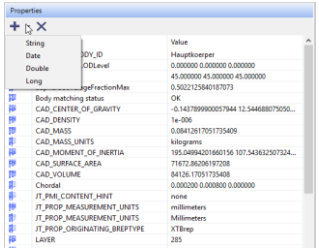
LiteMachine
Design to Manufacture



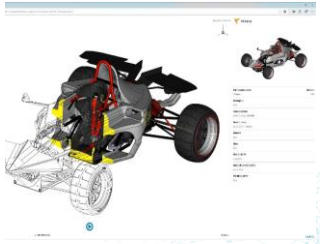
LiteCar
Vehicle Homologation



LiteImage
Image Capturing (Batch)



LiteProperties
Properties editing (batch)

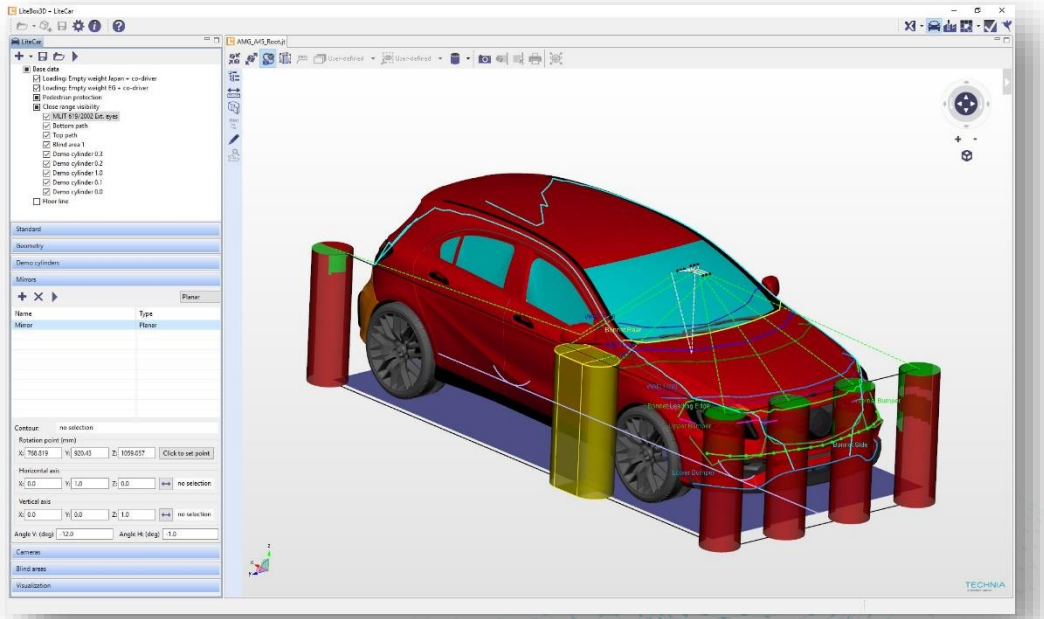


3DHTML
3DHTML creator (batch)

Custom Apps
LiteSilhouette, LiteCCC, ...

Vehicle Homologation

- Provide Vehicle Homologation functionality in Lite3D based on JT / ISO
- Current features:
  - Pedestrian Protection
  - Close Range Visibility
  - Bumpers
  - Side Impact
  - Crash Barriers
  - Floor line
- More features like in CAVA will be added over time



Scope

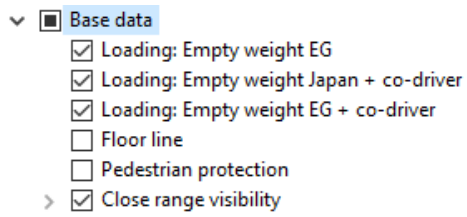
LiteCar helps to validate the compliance of your vehicle design and architecture to international rules, norms and standards during the entire design process – from the concept phase to the homologation. LiteCar provides the car designers a tool assuring the observation of car design relevant national and international regulations and standards. Also LiteCar allows the integration of company-internal design and security regulations into the car model. With our 15 years of experience in developing CAVA for CATIA this tremendous functionality is now also available for Non-CATIA customers, using the standardized ISO format JT.

General functionality

- Base Data definition
  General data of the vehicle defining its skeletal structure that are used for the most of the LiteCar functions. Once the base data is specified, it is available consistently for all LiteCar functions.

- Regulations
  Standards are embedded as free editable xml files. Thus company-internal rules or changes in standards can be integrated easily without need for a software update.

- Results
  All results including LiteCar generated geometry features are stored in a xml report file, e.g. for import into a CAD System



Pedestrian Protection

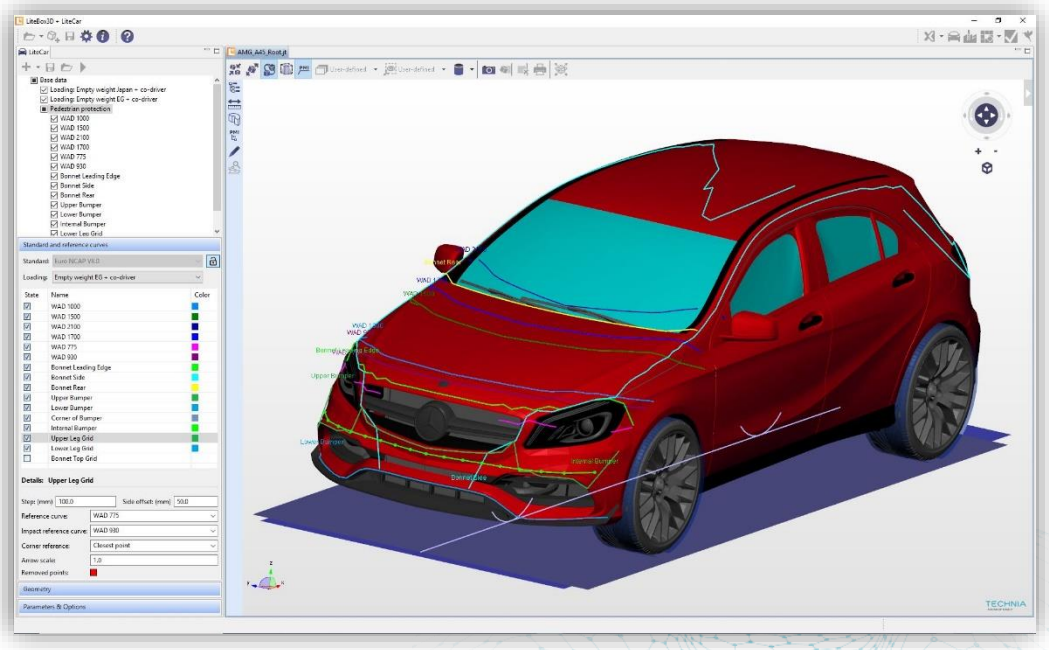
Standards for pedestrian protection have to be considered in vehicle development. For example, since 2005 Europe has pertinent legislation for the protection of pedestrians. In addition there is the EURO NCAP directive, which while not being binding for homologation still has a very high marketing impact.

Within the individual legislation various ranges and curves are defined, which mean certain requirements for a crash test.

Supported standards: Euro NCAP, GTR, ECE R-127

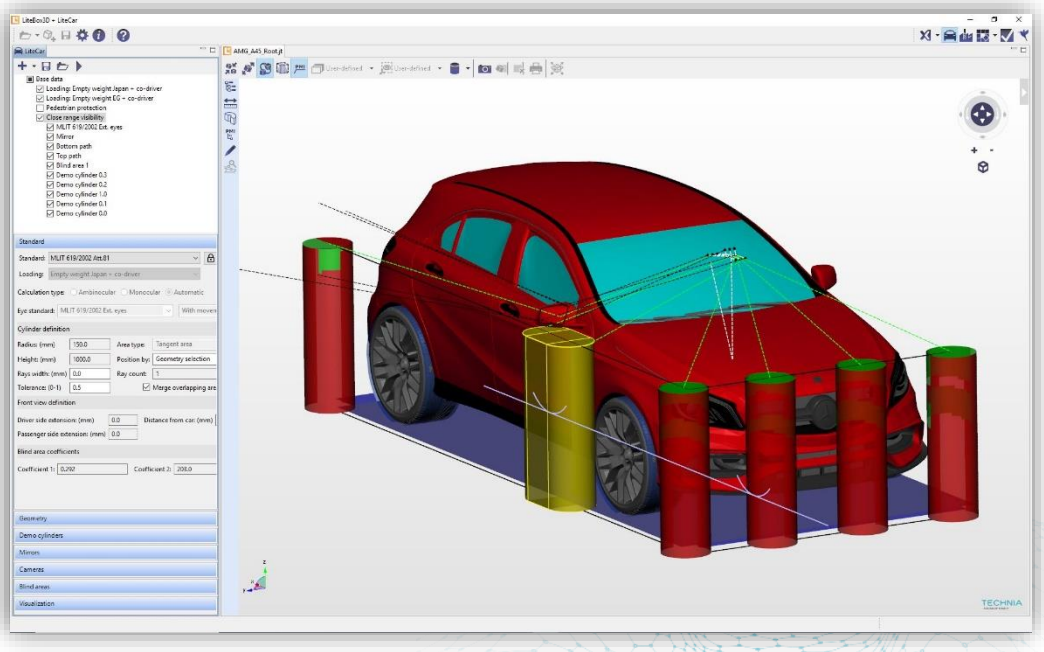
Calculation of:

- WAD curves
- Bonnet-Leading
- Bonnet-Side
- Bonnet-Rear
- Upper Bumper
- Lower Bumper
- Corner of Bumper
- Internal Bumper
- Upper Leg Grid
- Lower Leg Grid
- Bonnet Top Grid



Close Range Visibility

The Japanese visibility law (MLIT Announcement 619/2002 Att.81) requires the visibility of an „obstacle“ for the driver by direct view or by using a mirror or other optical systems. The obstacle, which is defined as a cylinder with a height of 1 m and a diameter of 0,3 m, must be visible (even partly) in a defined range in front of and beside the driver.



Supported standards: MLIT Standards MLIT 619/2002 Att.81 – BaseData, MLIT 619/2002 Att.81 - Contact und MLIT 619/2002 Att.29 – Frontal

Features:

- Positioning of simple and detailed demo cylinders
- Including planar, spherical, a-spherical and custom mirrors
- Including cone, square and customer shape cameras

Result:

- Visualization of blind spot areas and assessment if within or outside of permitted limits

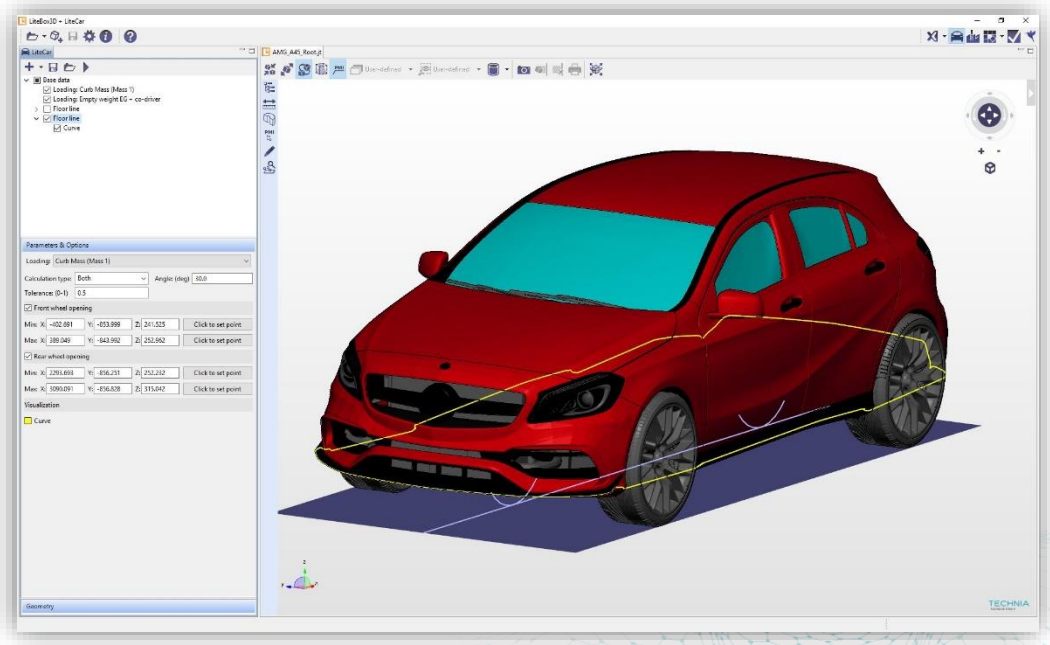
Floor line

The Floor line is required by the European standards EEC 74 / 483 and ECE-R 26 that define minimal allowed radii inside the “reachable“ areas of the vehicle outer geometry. The „reachability“ of the surfaces is checked by a sphere with a defined diameter (100 mm). In these areas, the surface must have a curvature radius that is above a specific limit (e.g. 2,5 mm).

The check region of the vehicle geometry is limited by the standard 2m above the road plane and as lower limit by the floor line.

Features:
- Calculation of the floor line
- Including consideration of wheel opening

Result:
- Visualization of the floor line



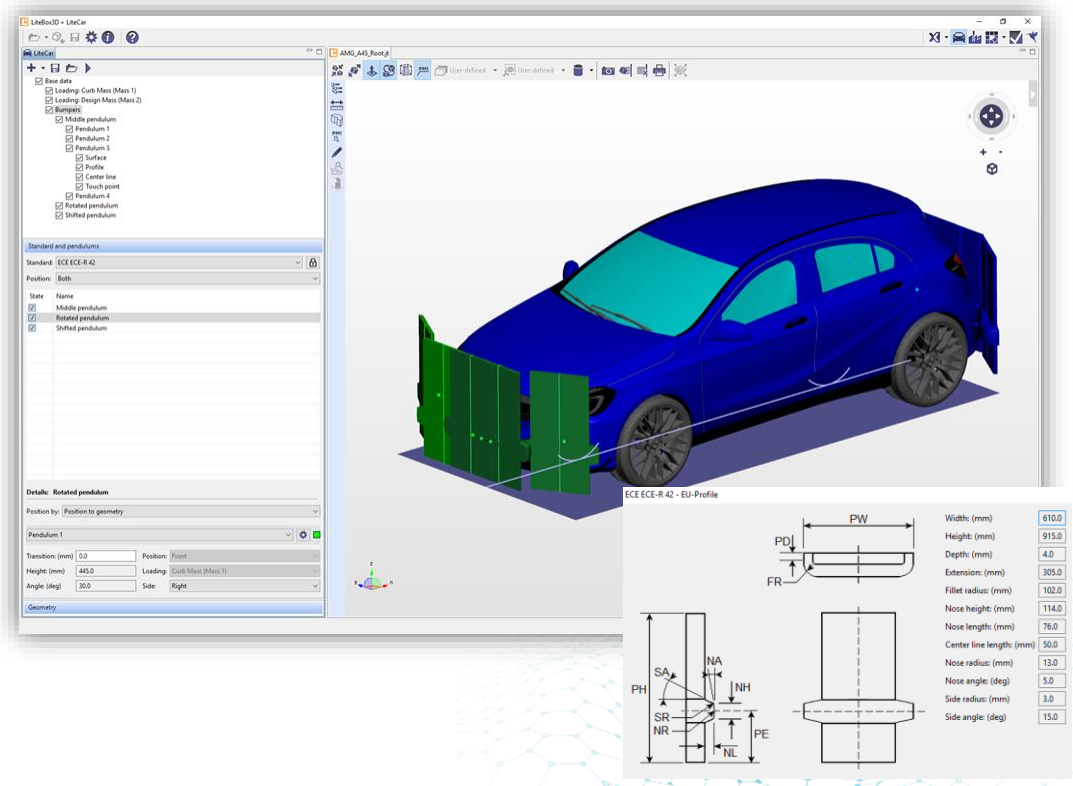
Bumpers

This feature checks the vertical position of bumpers according to applicable regulations.

Supported standards:
ECE-R 42
US 49 CFR 81
CDN CVMSS 215

Features:
- Positioning of middle, rotated, and shifted pendulums
- User defined pendulum profiles

Result:
- Visualization of bumper geometry



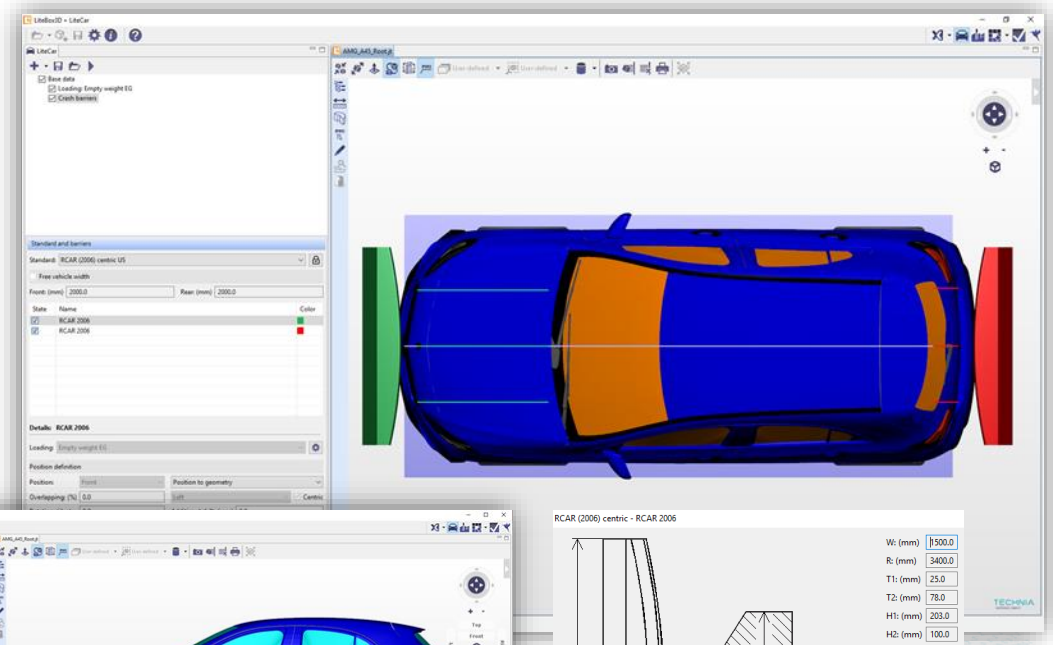
Crash Barriers

This feature facilitates positioning crash barriers.

Supported standards: RCAR and IIHS

Features:
- Positioning of crash barriers
- User defined barrier profiles
- Entry Card: This option calculates the qualifying bumper beam height and relevant vertical bumper engagement, according to the RCAR test procedure.

Result:
- Visualization of crash barriers geometry
- Entry Card



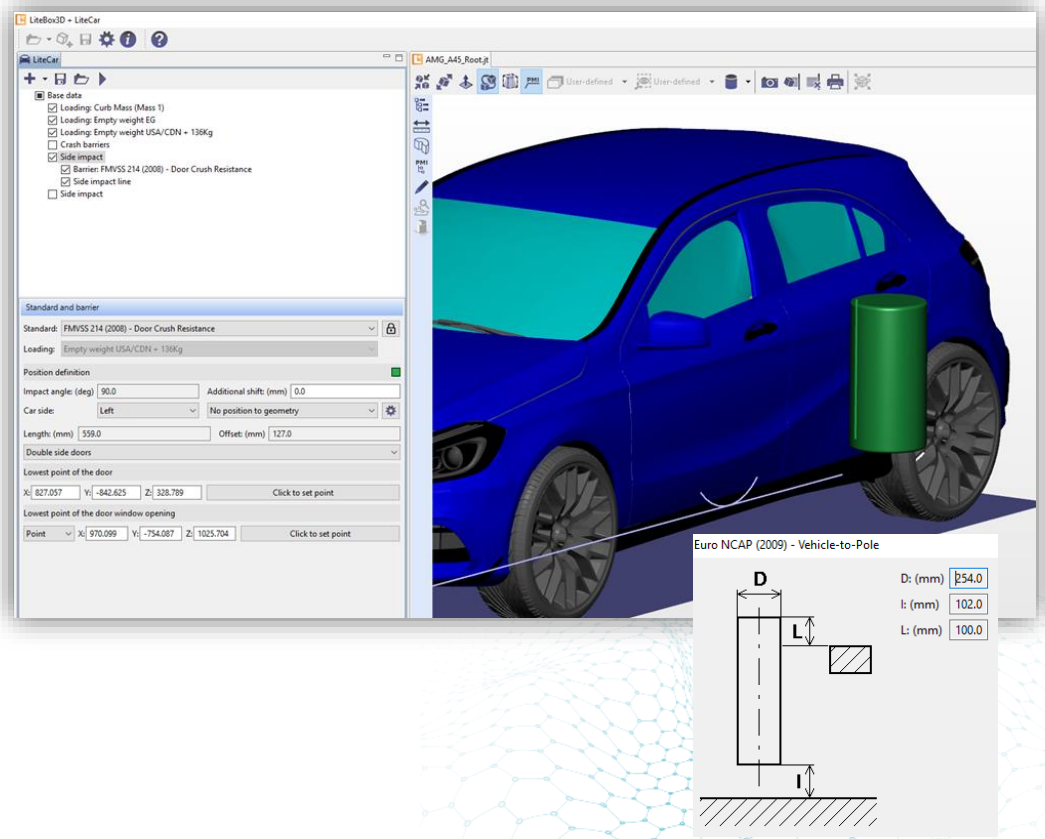
Side Impact

This feature facilitates positioning the barriers according to applicable standards.
The crash test procedures are performed to verify the ability to prevent injury of passengers.

Supported standards: Euro NCAP, FMVSS, and IIHS

Features:
- Positioning of crash barriers
- User defined barrier profiles

Result:
- Visualization of barrier geometry



Business Issue

- Automotive design needs to be compliant to many international standards and regulations.
- Manual verification of the compliance of the evolving design requires high effort and is subject to human errors.

Solutions

- LiteCar provides analysis features to verify the compliance of CAD models to international standards and regulations (ECE, GTR, Euro NCAP, FMVSS, RCAR, ..)
- LiteCar is integrated into TECHNIAs' Lite3D platform

Benefits

- Less need for physical prototypes due to validation of the digital model.
- Easy access to the provided standards and managing of car parameters.
- Applicable during all phases of the design process, from concept to homologation.
- Gain 15 years of experience in vehicle homologation and the knowledge of the CAVA community. CAVA is a proven solution and successfully used by more than 100 OEMs and suppliers world-wide.

LiteCar
TECHNIA
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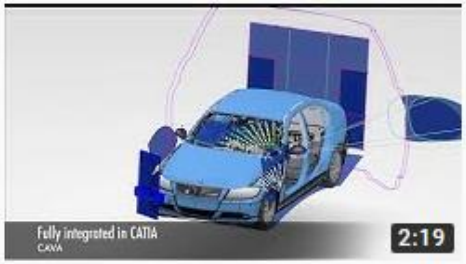
If you looking for more, please take a look at CAVA and let us know what you are missing in LiteCar…

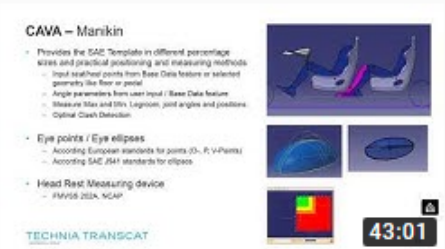


CAVA - CATIA Solution for Car Design and Legal Compliance

TechniaDACH • 35 Aufrufe • vor 2 Monaten

Sichern Sie die Einhaltung internationaler Normen und Standards schon ab Entwurfsphase Ihres Fahrzeugs - mit Hilfe von CAVA ...

https://www.youtube.com/watch?v=psVRCQmzNMs



Check your (automotive) design against international standards with CAVA

TECHNIA AB • 116 Aufrufe • vor 7 Monaten

TT Software Webinar Series 3: • Checks for Vehicle Architecture and Manikin • Direct Vision and Wiper • Mirrors, Sensors, ...

https://www.youtube.com/watch?v=hvs9pPsxkqU

TECHNIA

At TECHNIA, we pave the way for your innovation, creativity and profitability. We combine industry-leading Product Lifecycle Management tools with specialist knowledge, so you can enjoy the journey from product concept to implementation.

Our experience makes is possible to keep things simple, personal and accessible so that together we transform your vision into value.

With over 30 years' experience, more than 6000 Customers worldwide and World-class knowledge in PLM & Intelligent Engineering, we work together as an extension of your team to create an exceptional PLM experience.

Our teams work from 21 locations around the world, across vertical industries, delivering a premium service with a global infrastructure and a local presence. We adopt the latest technology and agile methodologies so, even as technology changes, our relationships last a lifetime.

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