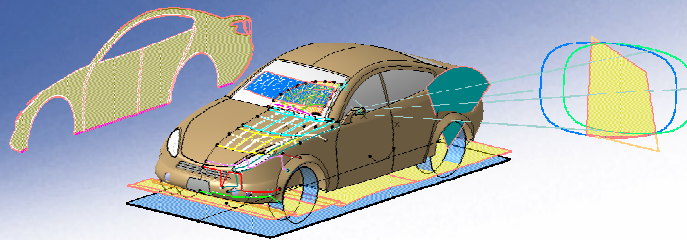


CAVA

## *CAVA 1.16.1 – What's new*



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# CAVA – Base Data



## New Option to define the Body Width (W116)

- This value is needed for the Fields of View creation for US (+ CDN) standards where W116 is used instead of W103

Overall Data	Wheels	Seats	Loadings
Vehicle Category :	Limousine		
Vehicle Description :	Limousine		
Vehicle Length (L103):	4662mm		
Vehicle Width (W103):	2000mm		
<b>Body Width (W116):</b>	<b>1950mm</b>		
Wheelbase (L101):	2792mm		
Overhang front (L104)/back (L105):	770mm	1100mm	

Fields Of View

Definitions  
Base Data : BaseData  
Standard : US FMVSS 103 / CDN CM  Free  
Loading : Empty weight USA/CDN

Use Standard Eyes  Use V5 Points

Curves  
 Enable Daylight Curves  
 Closed Curve : no selection  
 Two Curves Left : no selection Right : no selection

Screen : no selection

Visualization  
 Show A-Field  Show B-Field  Show C-Field  
 Create Faces  Show Pyramid

Fields Definitions  
A-Field B-Field C-Field "Width"-Thresholds

W116 used for calculation.

OK Apply Cancel

Fields Of View

Definitions  
Base Data : BaseData  
Standard : EG EWG 77/649  Free  
Loading : Empty weight EG + co-dr

Use Standard Eyes  Use V5 Points

Curves  
 Enable Daylight Curves  
 Closed Curve : no selection  
 Two Curves Left : no selection Right : no selection

Screen : no selection

Visualization  
 Show A-Field  Show B-Field  Show C-Field  
 Create Faces  Show Pyramid

Fields Definitions  
A-Field B-Field C-Field "Width"-Thresholds

W103 used for calculation.

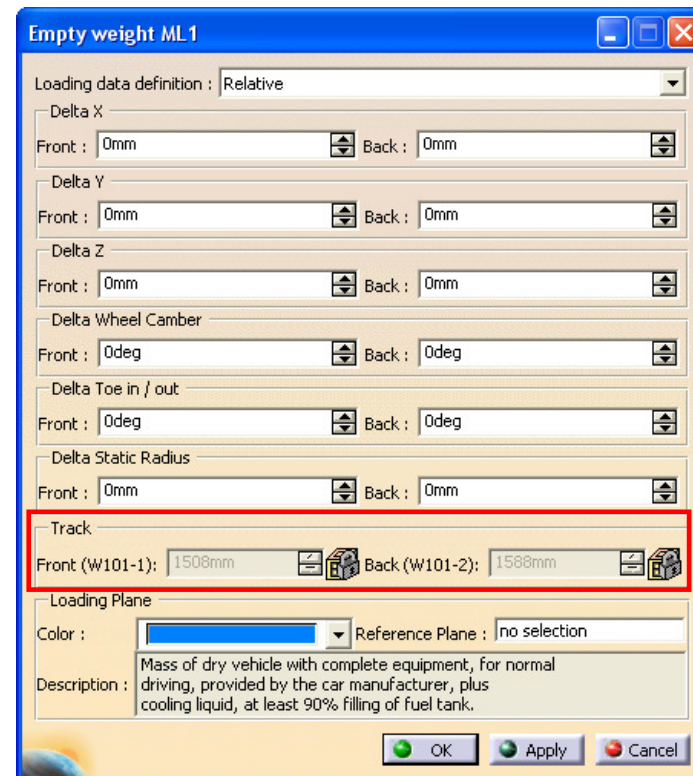
OK Apply Cancel

# CAVA – Base Data



- Added new parameter for the track of front and rear to the loading details GUI (similar to the wheels tab)

- Parameter will show the calculated value of the track front / rear
- Parameter are 'Read only'



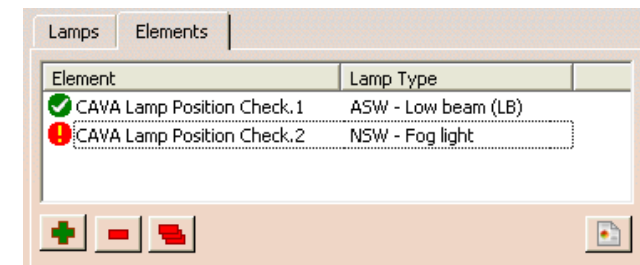
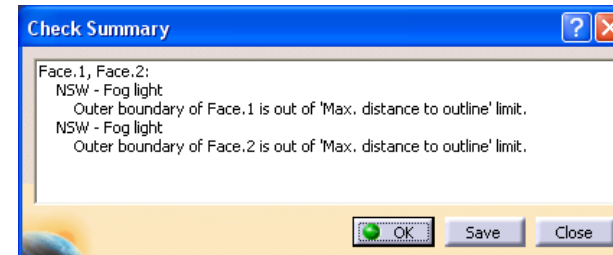
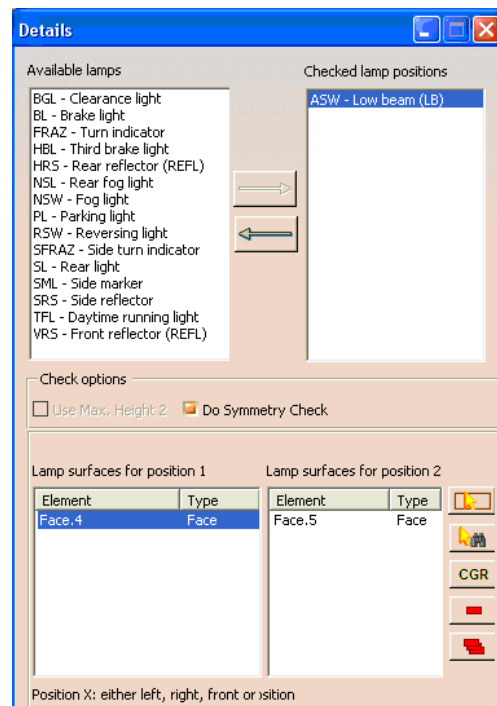
# CAVA – OVA



## Lamp Position



- New functionality to check the lamp position according to selected geometry for the different lamp types



# CAVA – OVA



## New feature “Lamp Visibility”

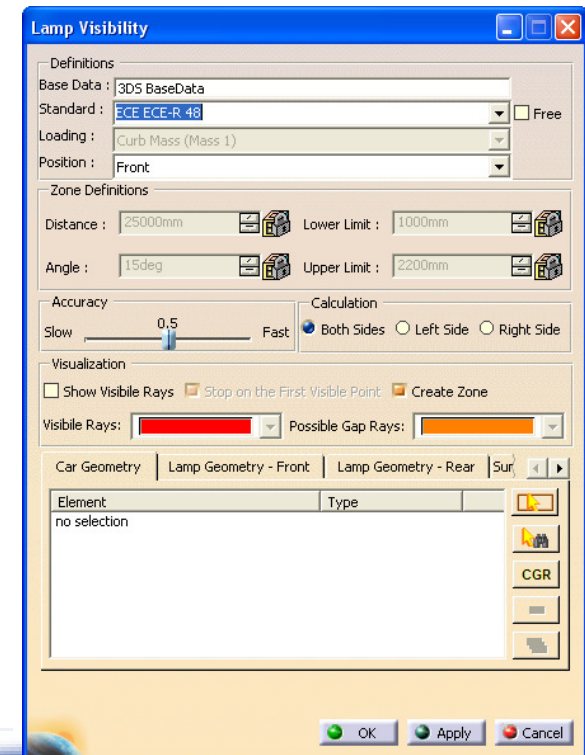
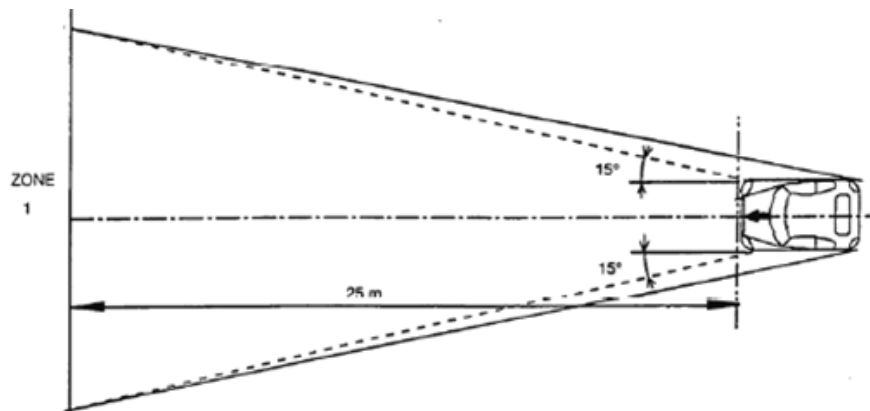


ECE R-48 restricts the visibility of red lamps towards the front and white lamps towards the rear

Lamps are “switched off”

E.g. Visibility of red light towards the front:

For an observer moving in zone 1 of a transverse plane 25 m ahead of the vehicle, the illuminating surface of a red lamp must not be directly visible



# CAVA – OVA



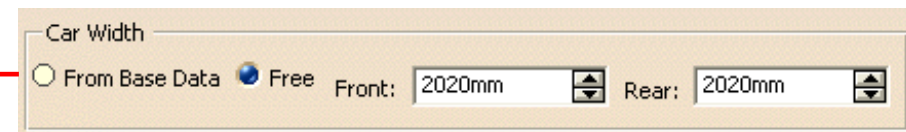
## Crash Barriers



🔗 New option to define the vehicle width inside Crash Barriers

### GUI for IIHS standards


🔗 *Different to the RCAR standard, where the vehicle width (W103) is taken from CAVA Base Data, the IIHS standard uses the vehicle width at the front/rear axis for the calculation of the overlap*



# CAVA – Vision



## New Feature “Plan View”


 Generation of a plan view in the plane around a defined eye point according to GCIE requirements

 635mm above SRP

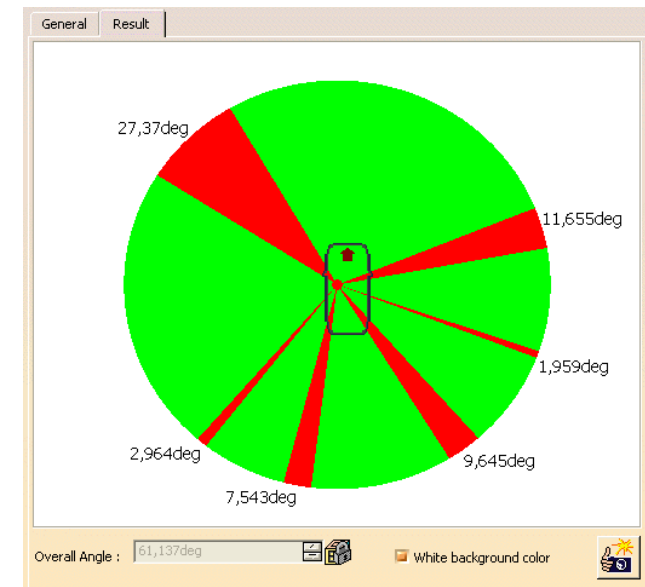
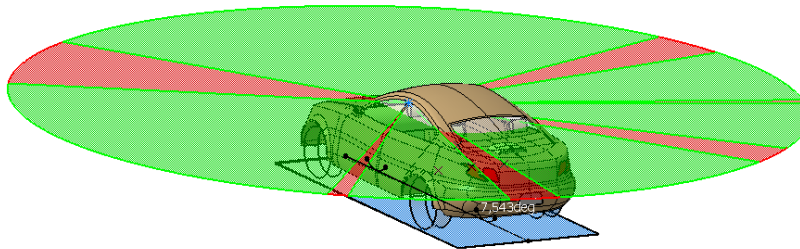
 635mm above and 68mm rear SRP

 Comfortable geometry selection

 CGR or V5 elements

 Specific optional selection for window and head rest geometry

 Result visible in 3D and 2D Viewer

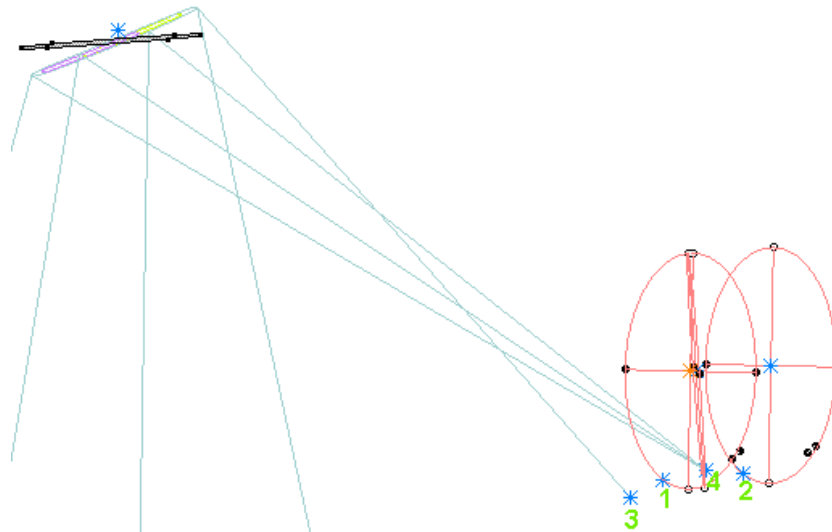


# CAVA – Vision



## Rear view Mirror

- 👤 New implementation to create the original or exposed eye points from eye ellipses separately (in addition to the CAVA Manikin eye ellipse feature)



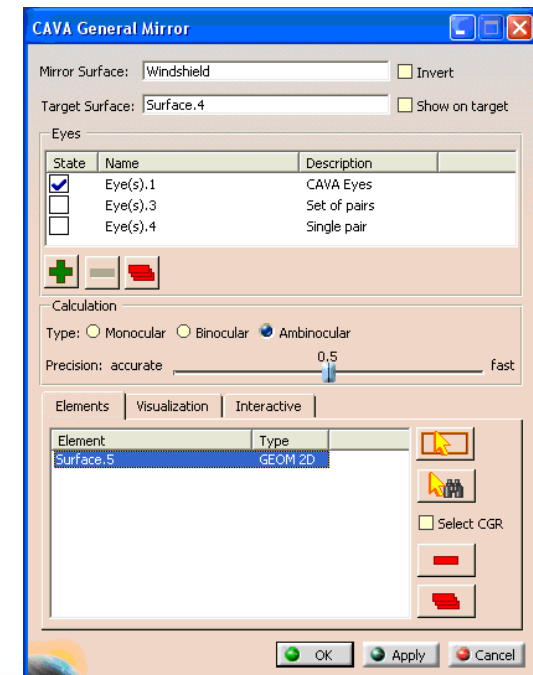
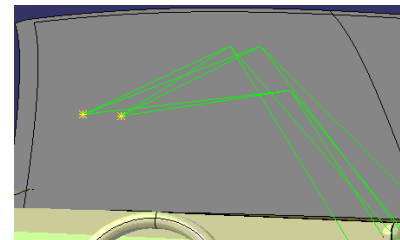
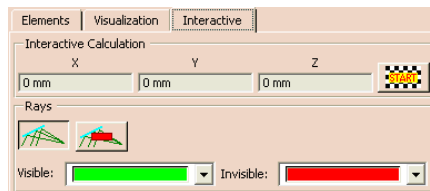
- CAVA Mirror.1 ( US FMV55111 (Wall
- CommonPicture
- LeftEyePicture
- RightEyePicture
- `Center Y Shift`=0mm
- `Center Z Shift`=0mm
- Radius=2000mm
- `Angle (vert.)`=20deg
- `Angle (hor.)`=5deg
- 1 Left Origin Eye
- 2 Right Origin Eye
- 3 Left Rotated Eye
- 4 Right Rotated Eye
- `Rotated Angle`=16,648deg
- CAVA Eye Ellipses.1 ( SAE J941

# CAVA – Vision



## ➤ New Feature "General Mirror"

- Allows general mirror investigations not necessarily linked to rear view mirrors
  - ↳ e.g. mirroring of dashboard elements in windscreen etc.
- Check for monocular, binocular and ambinoocular vision
- Use single eye point, pair of eyes or a set of pairs for check
- Provides interactive, dynamic check for sight rays



# CAVA - Safety

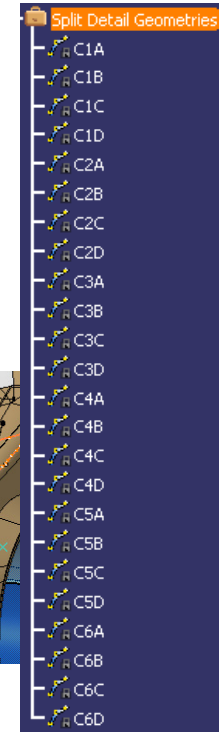
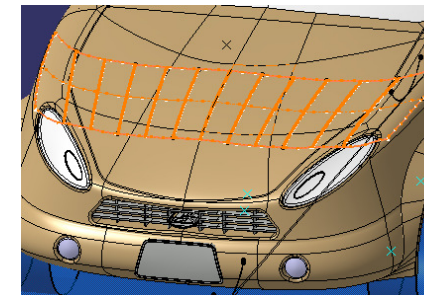
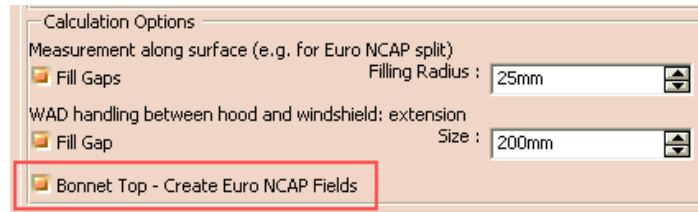


## ● Pedestrian Protection



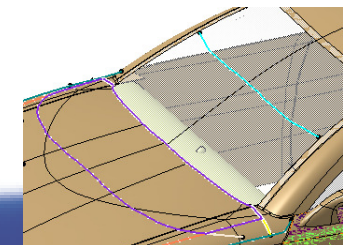
### 👤 Bonnet Top area for EuroNCAP standard

- 👉 New option to visualize each EuroNCAP field (Bonnet top split) as separate CAVA / V5 wireframe geometry.



### 👤 New Option to create the Wrap Around curve on the windshield in parallel to the Bonnet Top (Adults head area) which is limited by the Bonnet Rear Curve

- 👉 *Used for European and Japanese standards*



# CAVA - Safety

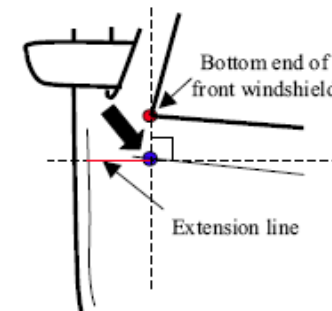
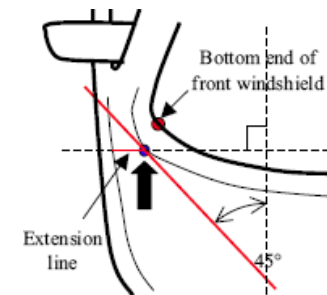
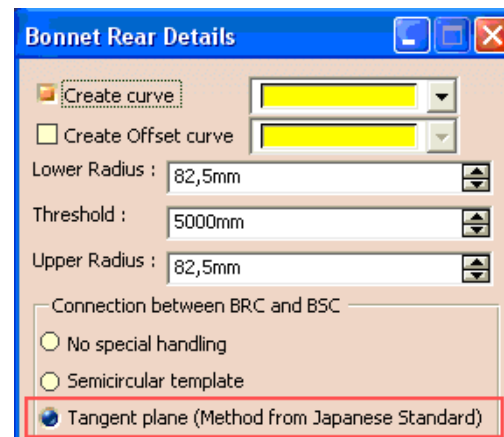


## Pedestrian Protection



### Connection of Bonnet Rear with Bonnet Side Curve

- Added Japanese algorithm to create the connection by 2 different methods.



# CAVA - Safety



## Pedestrian Protection



Improvement for User Interface: show curve calculation status in multi list for each single curve

All failed curve creation is marked by the sign

Reference Curves		Parameters	Options			
Name	Value	State	Color	Off...	Color	
Upper Bumper	20deg	<input checked="" type="checkbox"/>	Red	N/A		
Lower Bumper	25deg	<input checked="" type="checkbox"/>	Green	N/A		
Corner of Bumper	60deg	<input checked="" type="checkbox"/>	Blue	N/A		
Bonnet Leading	50deg	<input checked="" type="checkbox"/>	Orchid	<input type="checkbox"/>	Orchid	
BonnetSide	45deg	<input checked="" type="checkbox"/>	Dark cyan	<input type="checkbox"/>	Dark cya	
WAD 1000	1000mm	<input checked="" type="checkbox"/>	Brown	N/A		
WAD 1500	1500mm	<input checked="" type="checkbox"/>	Antique ...	N/A		
WAD 2100	2100mm	<input checked="" type="checkbox"/>	Cyan	N/A		
WAD 1700	1700mm	<input checked="" type="checkbox"/>	Cyan	N/A		
Bonnet Top 1	N/A	<input checked="" type="checkbox"/>	Coral	N/A		
Bonnet Top 2	N/A	<input checked="" type="checkbox"/>	Blue violet	N/A		

# CAVA - Safety



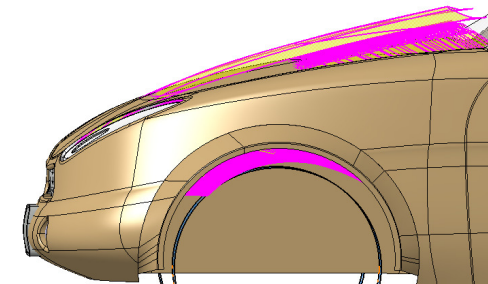
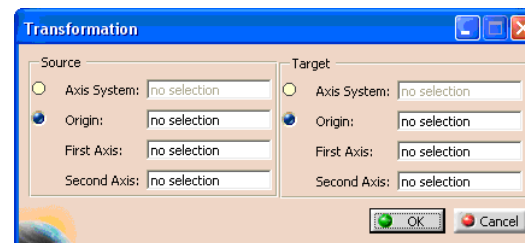
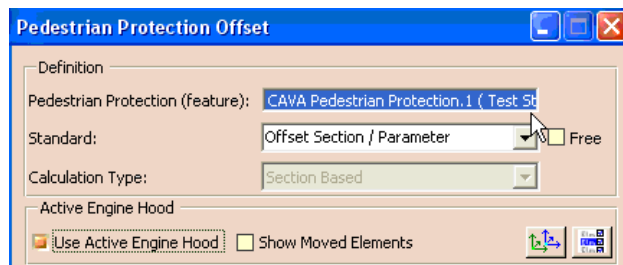
## ● Pedestrian Protection Offset



👤 New option to use an active engine hood

- 👤 *In case of a crash certain elements are moved automatically away from the engine towards an upper direction.*
- 👤 *The movement will be defined by either 2 selected V5 axis systems or by definition of 2 sets of own axis systems (Point, 2 Lines)*

-> *The calculation is based on a "Axis to Axis" transformation*



# CAVA - Safety



## ● **Safety Radius (exterior)**



👤 Improved algorithm to find unreachable points

## ● **Minimum Radius (interior)**

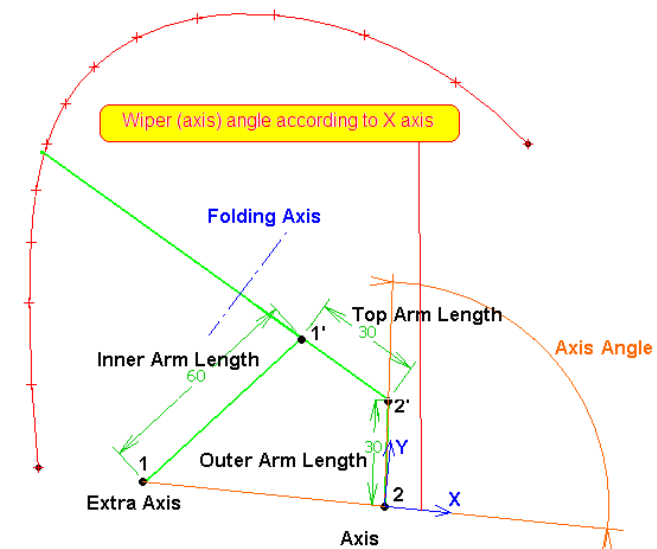
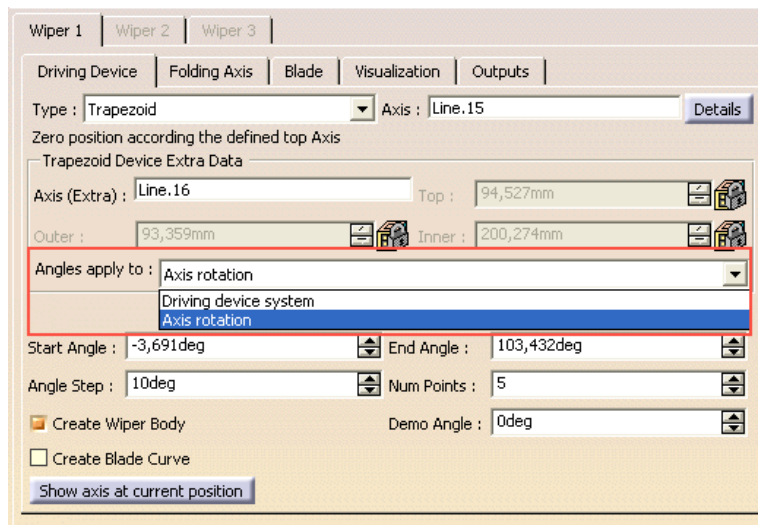


👤 Improved algorithm to find unreachable points

# CAVA – Wiper



- New option to allow to define the angles for the trapezoid wiper also in respect to the selected axis (first axis)



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***THANK YOU***

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