

FOR SMART
AND RESPONSIBLE
PAINT SHOPS

Agenda

1. Introduction to ESS
2. Alsim Paint Shop
3. Alsim Dip Paint
4. Alsim E-Coating
5. Alsim Oven
6. Alsim Sealing

Company Highlights



50+

Employees



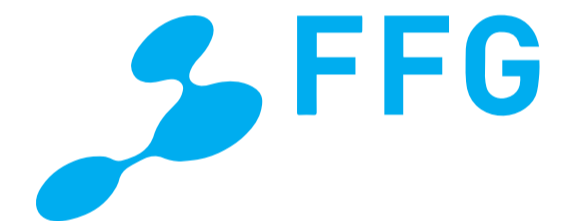
30+

Top brand customers



3

EU funded projects



12

Austrian funded projects

Amazing Team



Strong Core Team
located in Steyr | Austria



Subsidiaries in India,
Turkey and Poland



Distributor in
China, US, Japan, Korea



Advisory Board



Olivier Leteurtre

CEO of AUTOFORM - world market leader working with "all" automotive car manufacturer worldwide doing forming, stamping, welding for manufacturing process.



Hugh McEvoy

Global Business Development for SketchUp - world market leader in early-stage design software for building, construction and environment.

Key Advantages of ESS Solutions

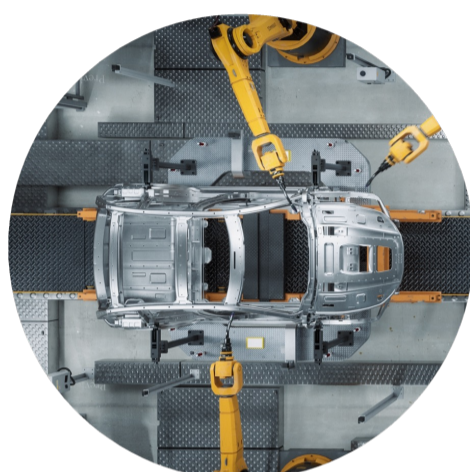


PEOPLE CENTRIC

Suitable for not just CFD experts.
Also, Designers or Paint Shop Managers can easily learn to use

Helps solving vast majority of pain points related to paint shop

Easy pre-processing and post-processing



AUTOMATED

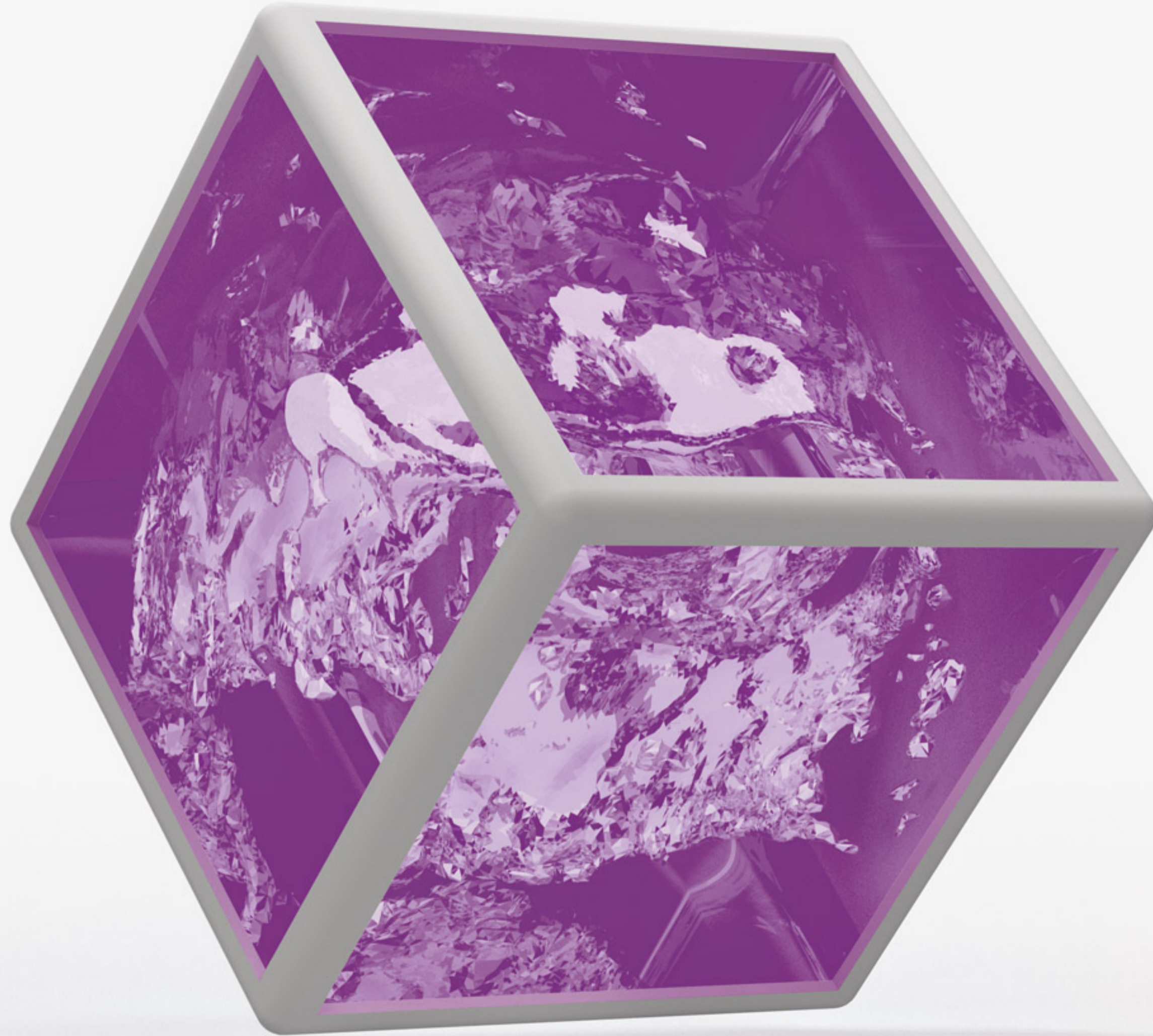
Automated workflows allow to quickly iterate digital prototypes with less effort

Automated reports remove time consuming manual work from experts



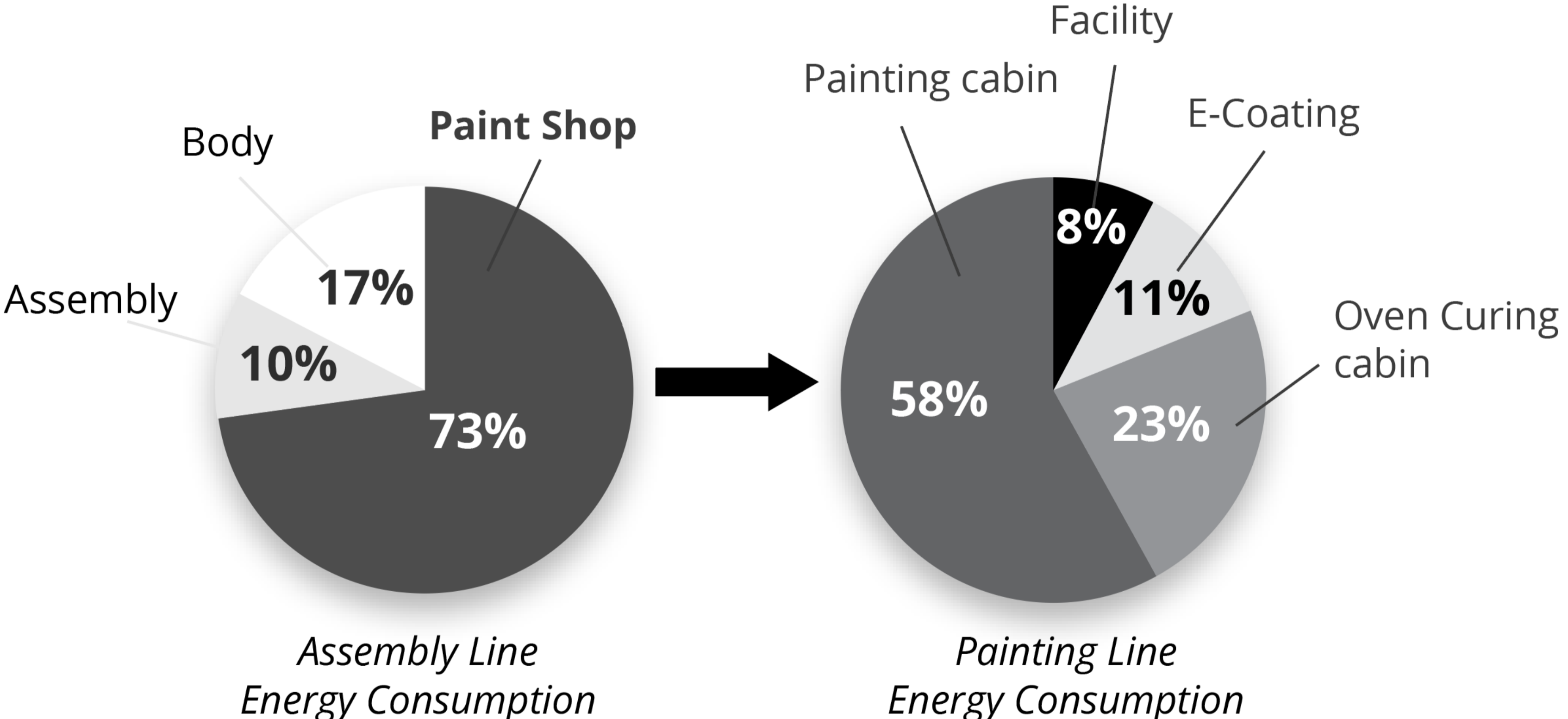
COMPREHENSIVE

Most robust solution that covers entire paint shop process to bring most value

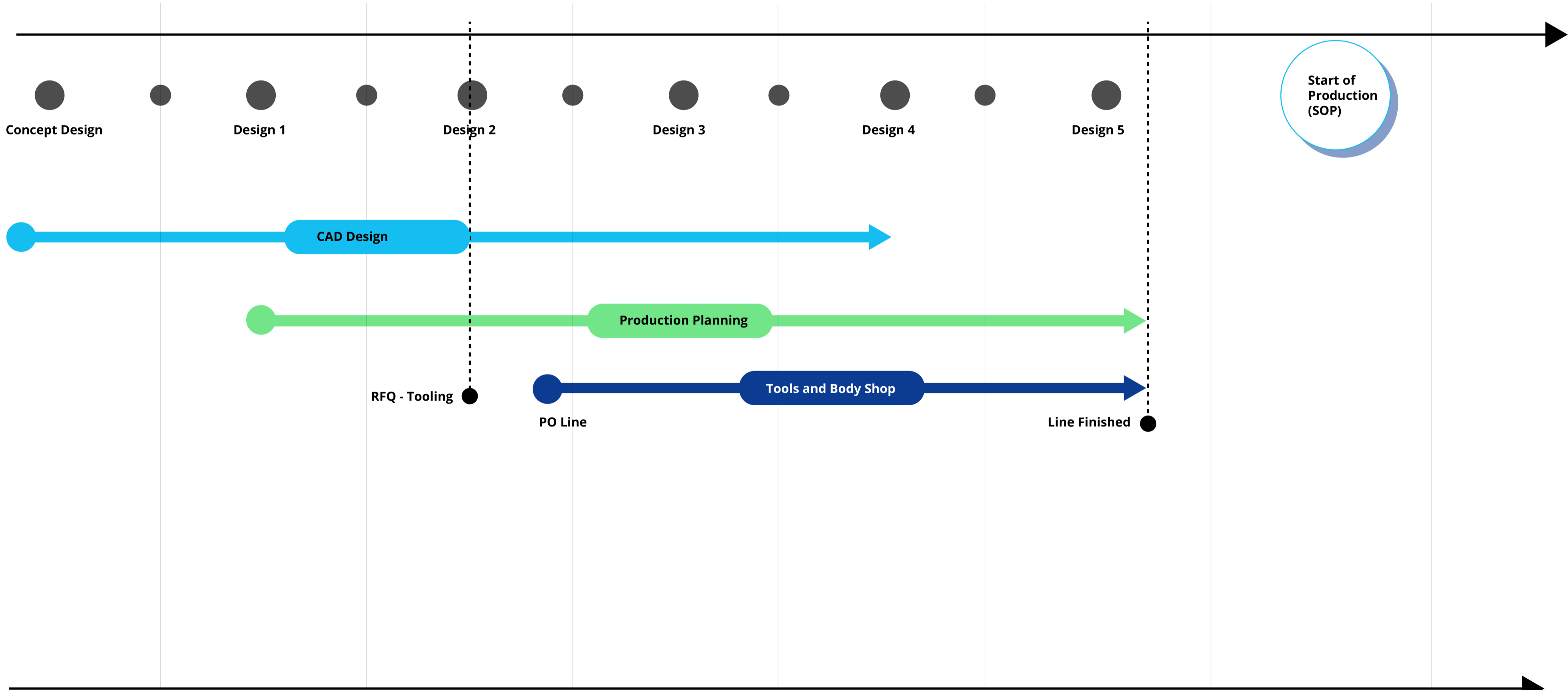


Most comprehensive
simulation solution
for automotive paint shop

Why is Paint Shop Simulation needed

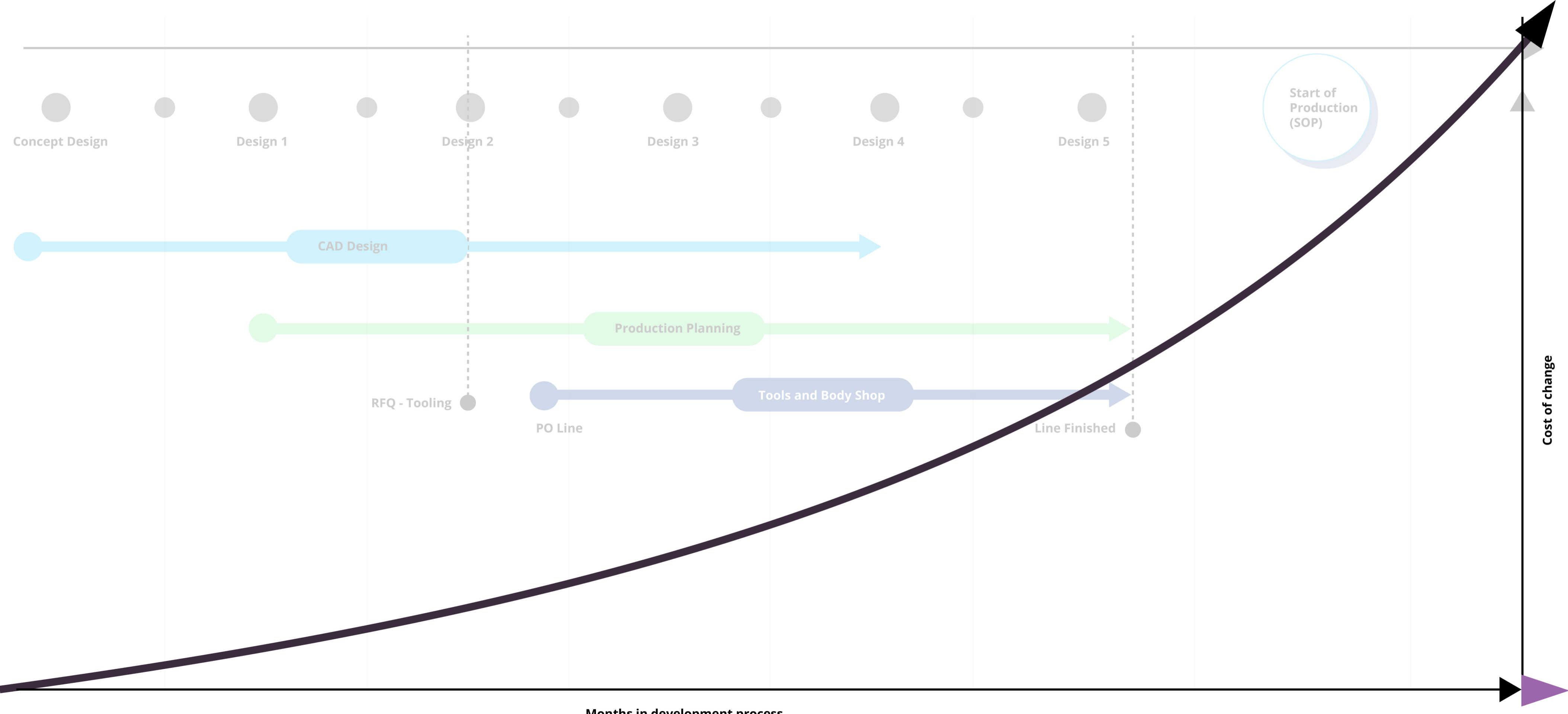


Product Development Process

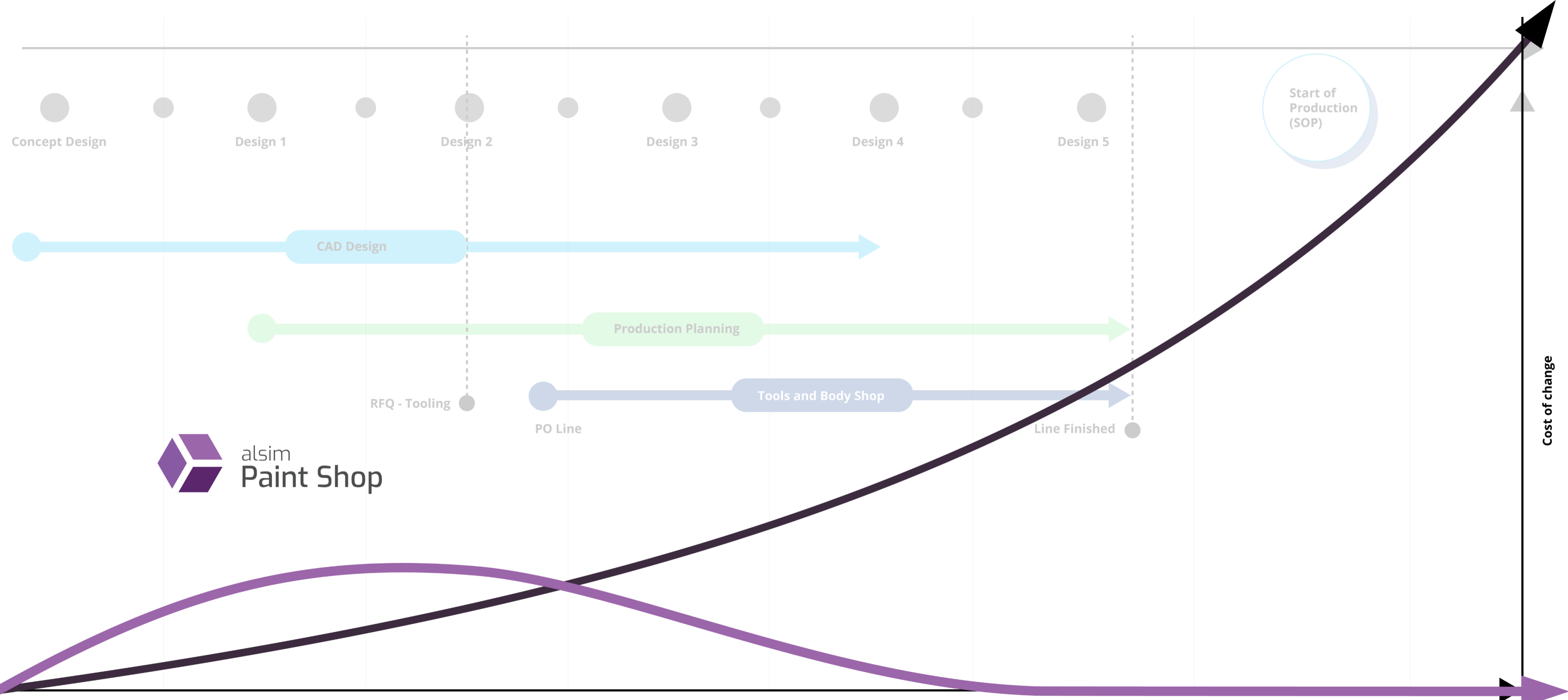


Months in development process

Product Development Process



Product Development Process

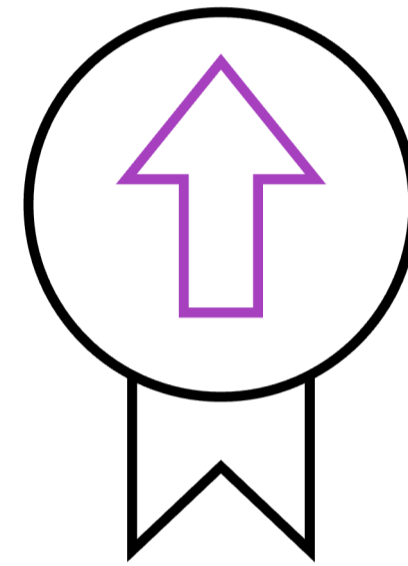




Speed Up

Reduce Development Time
as much as possible

New technologies should be
in the market before
competition



Improve Quality

Provide suitable quality for
new car bodies

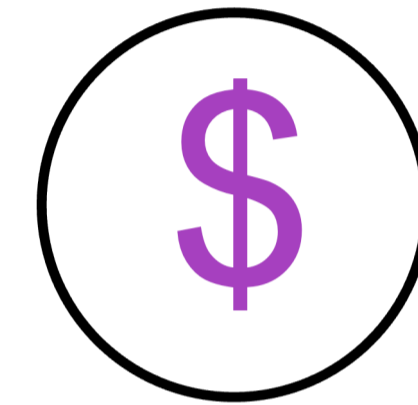
E-cars changed its
geometry and many paint
shops can not deliver
needed quality



Save Energy

Sustainable development

SDGs: CO2 consumption
(energy, material)



Cut Costs

Cost effective production

ESS ROI in long term

1 Quality Improvement
longer period of high-quality
cars in the street

2 New Technologies at first
in the market

3 Less production stops
to clean the environment

4 Less Manpower in Quality
Control and Repair



Optimizes:

Design of new
car bodies

Existing
car bodies

Design of new
paint shops

Parameters
of existing
paint shops



Gets Noticed:

1st Place

US BIZ-Award 2018:
Market- Entrance in
the US



1st Place

Pegasus 2019:
Hope for the Future



3rd Place

2020:
GEWINN Young
Entrepreneurs





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Paint Shop

Is trusted:

Traditional car manufacturers

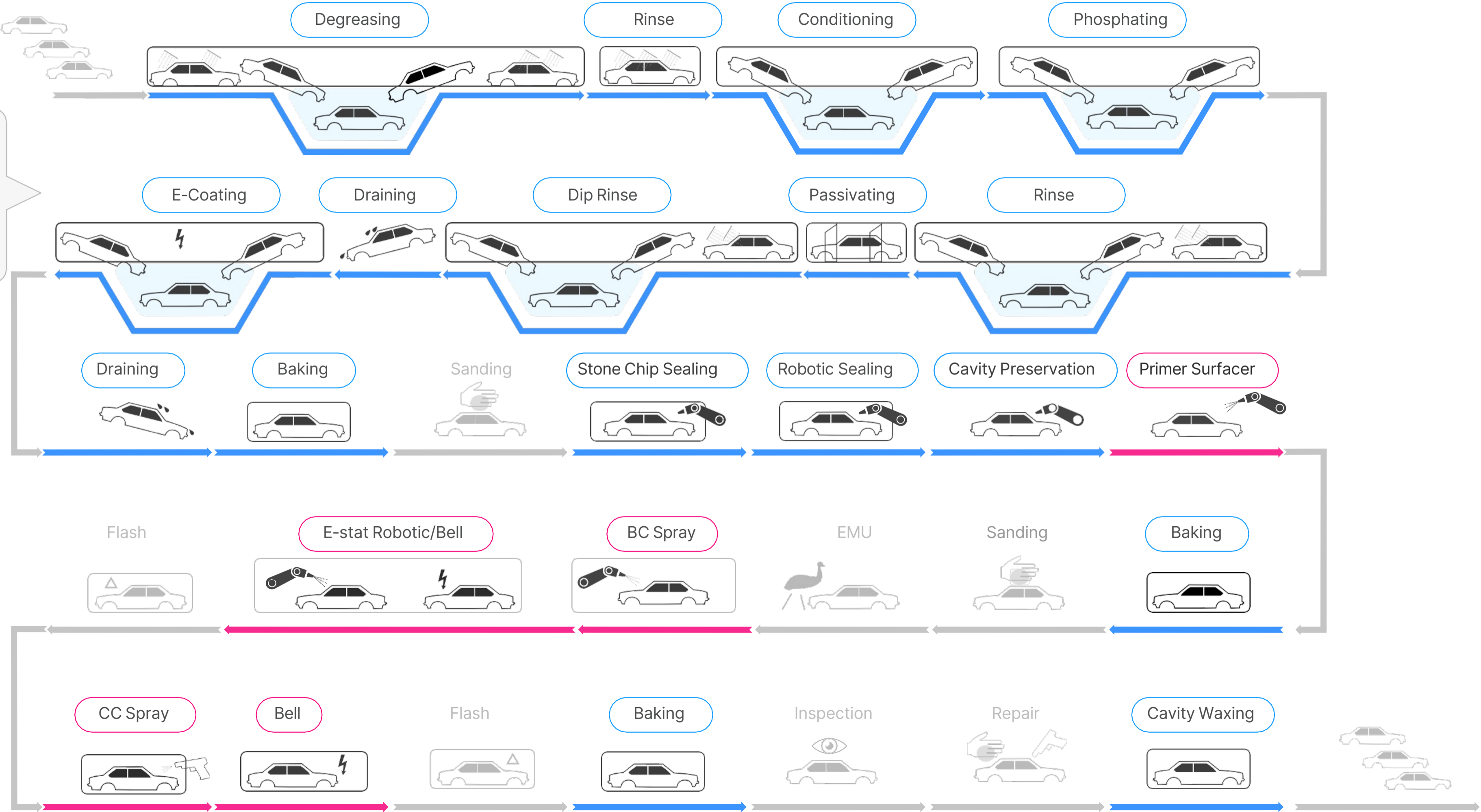


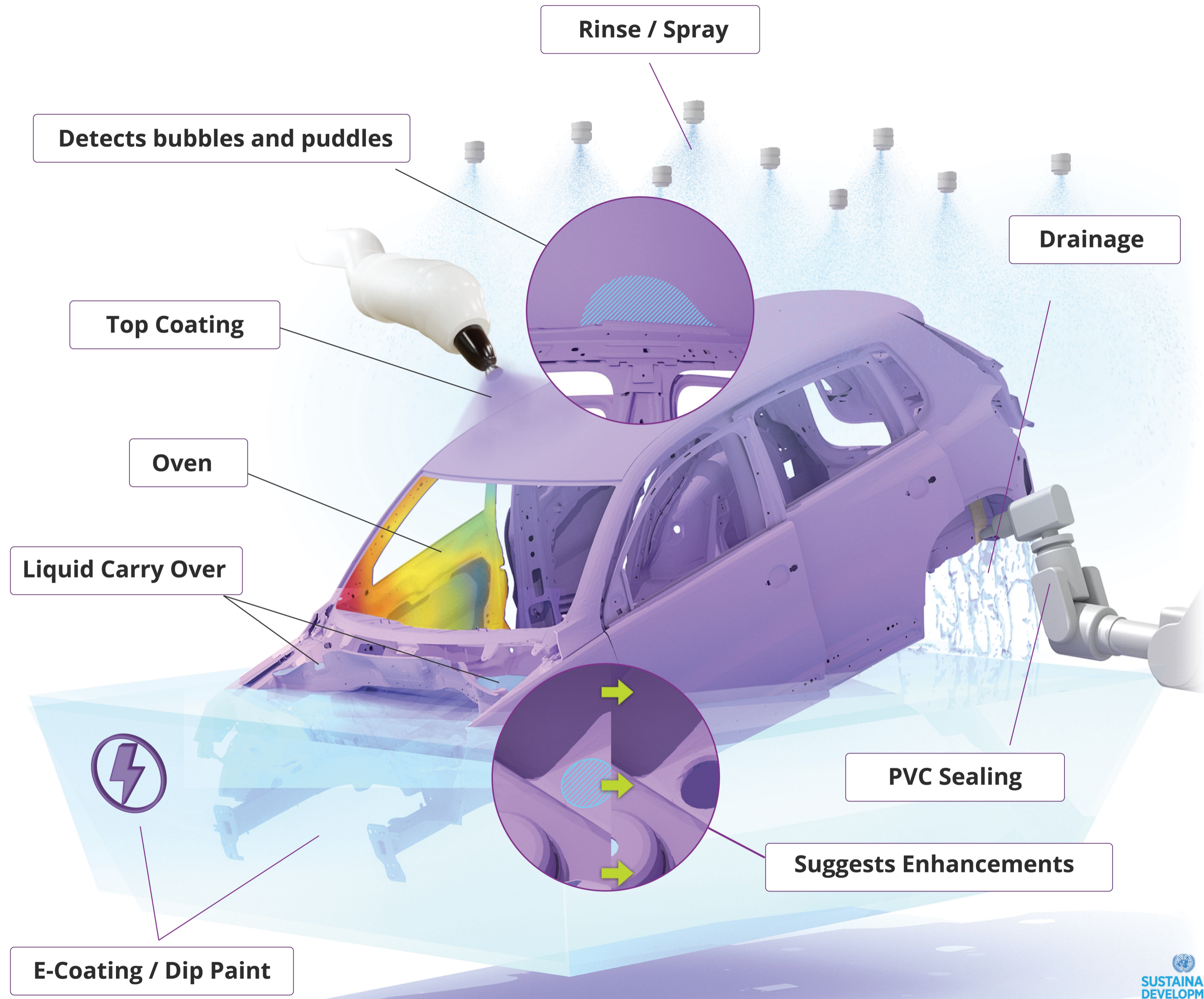
E-Car manufacturers



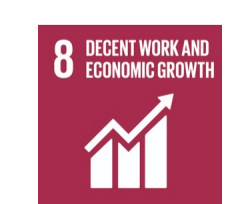
A typical paint shop

 Ready for ESS simulation
 Future Development
 Other steps





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Paint Shop





alsim paint shop
E-Coating

Flawless uniform deposition with minimum energy consumption using alsim Paint Shop E-coating.



alsim paint shop
Dip Paint

No more air bubbles or paint puddles during dip-in and dip-out process.



alsim paint shop
Oven

Absolute control over the most energy-intensive painting process, leaving no scope for wastage.



alsim paint shop
Sealing

Efficient leak prevention with perfect sealant application designed to your paint shop needs.




alsim paint shop
Retain Water

Get improved paint adhesion and superior quality by predicting humidity levels during painting using alsim Retain Water.



alsim paint shop
Flood Waxing

Maximize corrosion protection by ensuring uniform and cost-effective wax application across all parts.



alsim paint shop
Spray Waxing

Get accurate insights that enable you to optimize spray parameters, enabling unvaried distribution and reduced overspray.



alsim paint shop
Bake Drips

Ensure an ideal finish by predicting and eliminating pain drips using insights from alsim Bake Drips.



alsim paint shop
Anodizing

Top-quality anodizing with reduced energy usage and maximized surface durability.



alsim paint shop
Rinse/Spray

Remove 100% contaminant with minimal water and energy usage using the detailed insights from alsim Rinse/Spray.



alsim paint shop
Top Coating

Find optimal environmental conditions, coating techniques and parameters to ensure consistent coating thickness and finish.

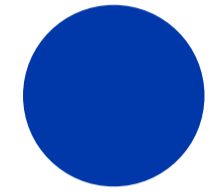


alsim paint shop

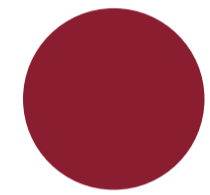
Dip Paint

No more air bubbles or paint puddles during dip-in and dip-out process

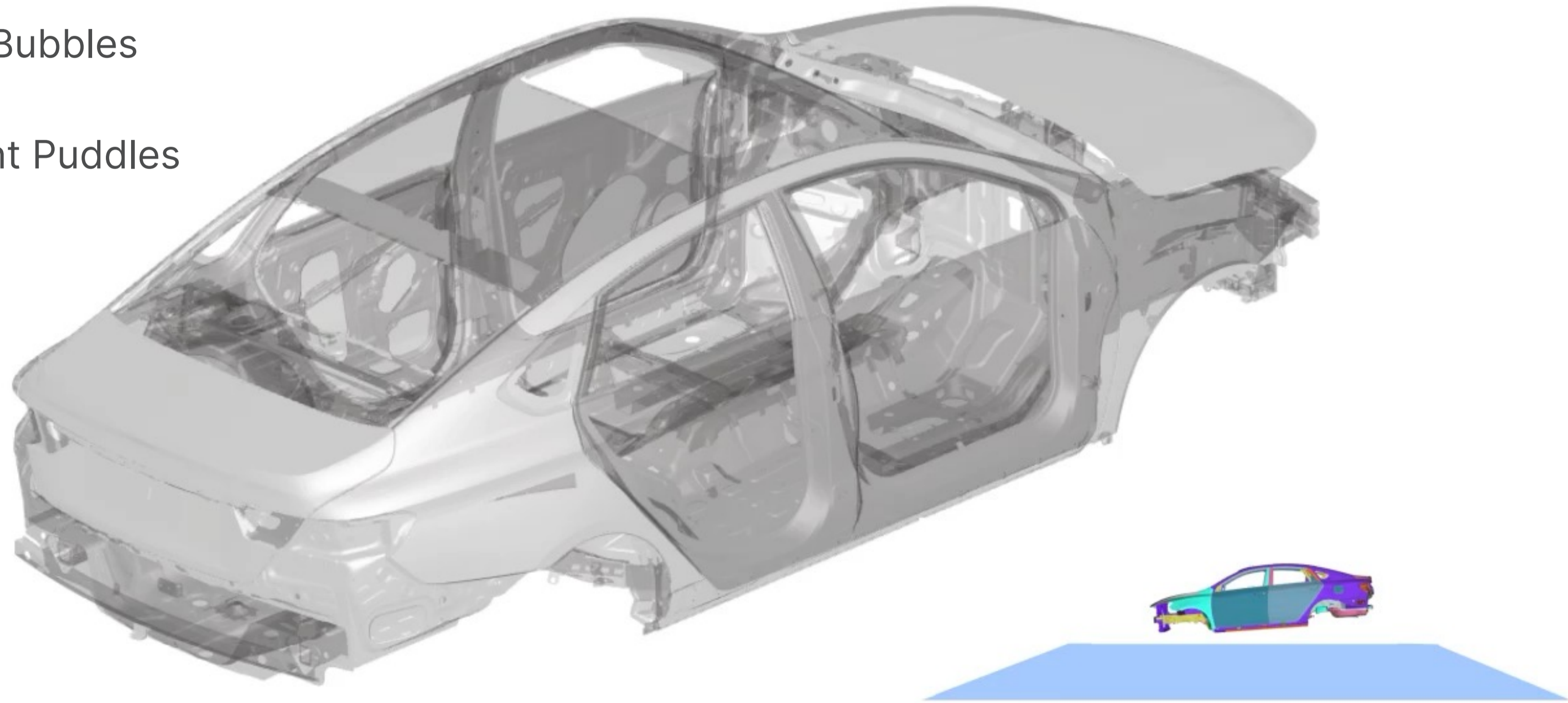




Air Bubbles



Paint Puddles



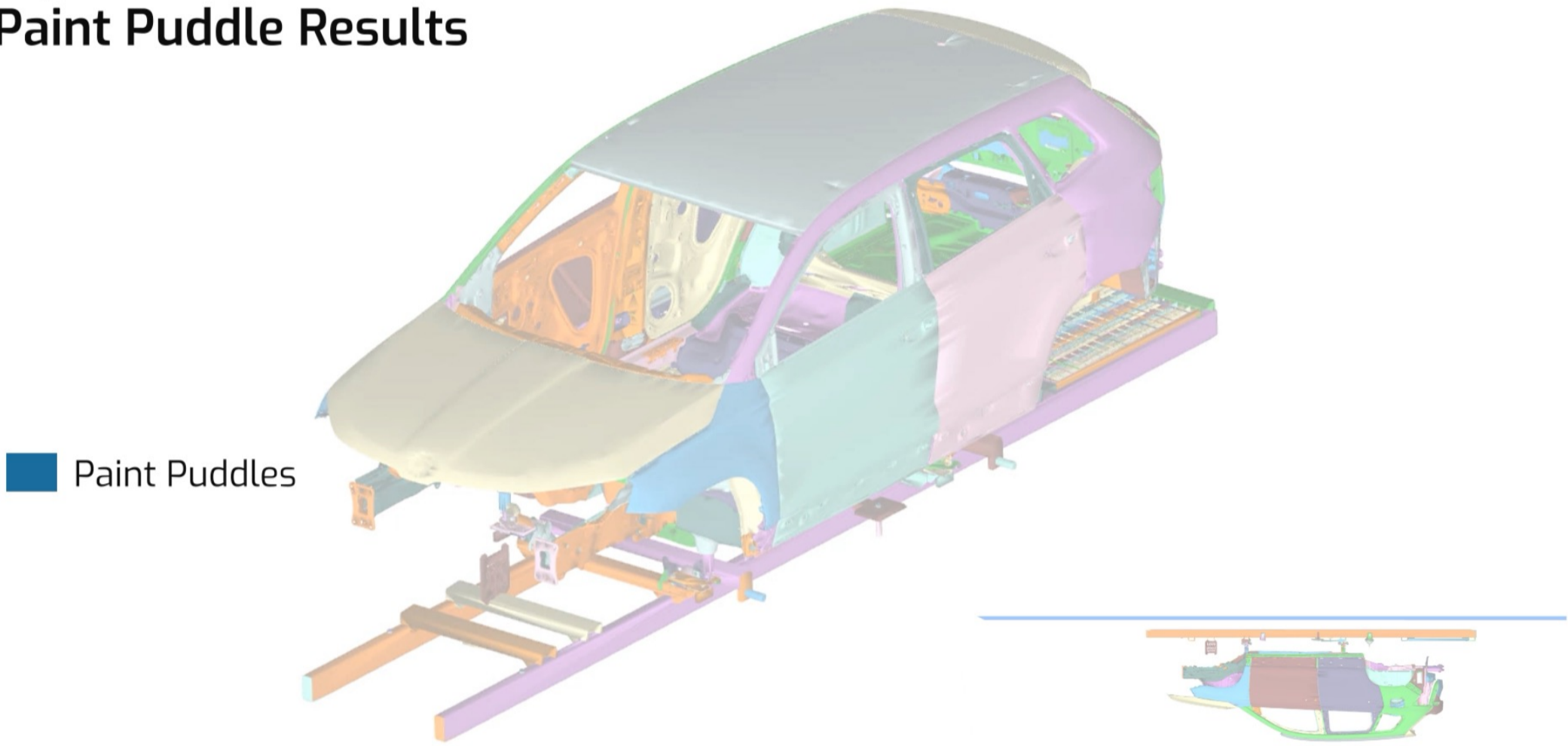
Case Study

SKODA

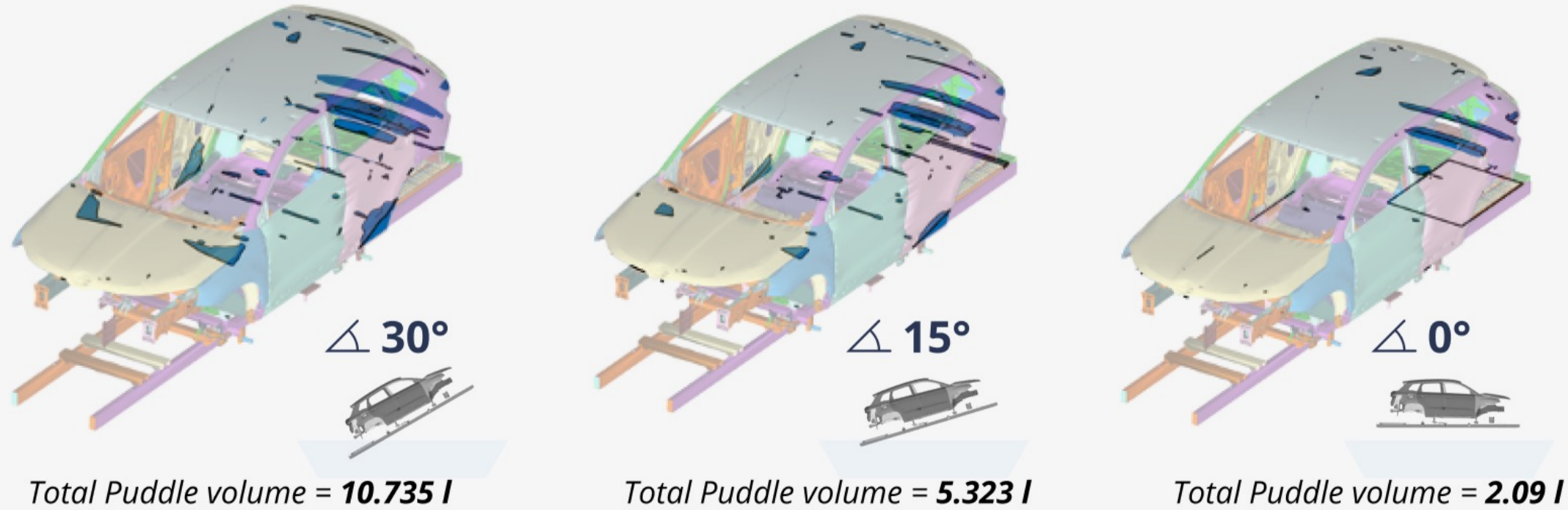
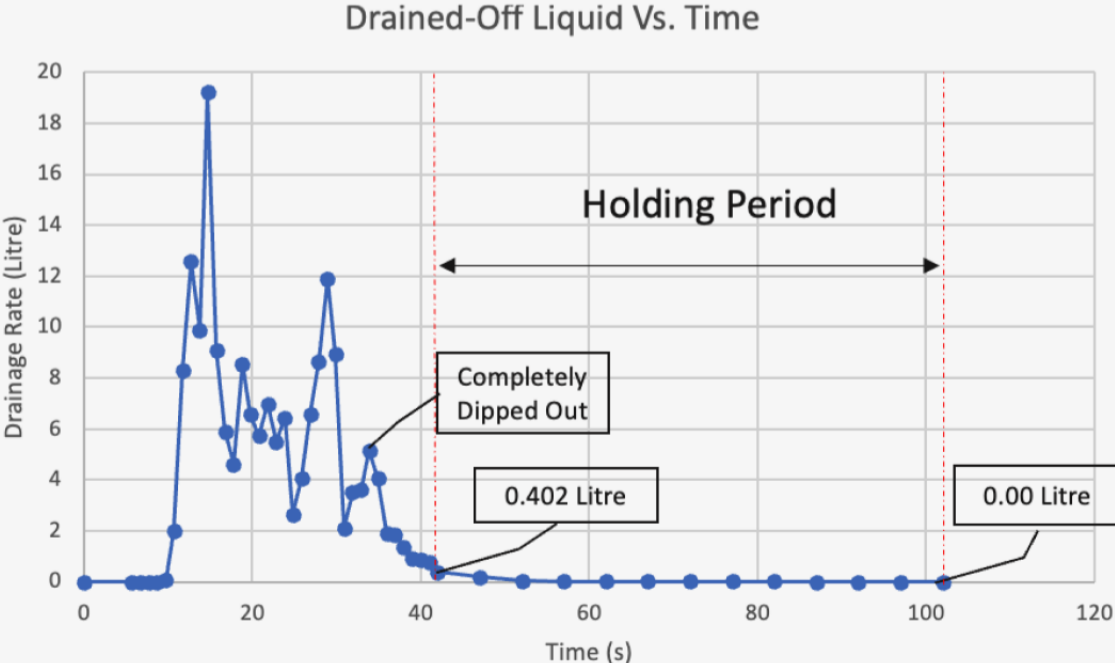
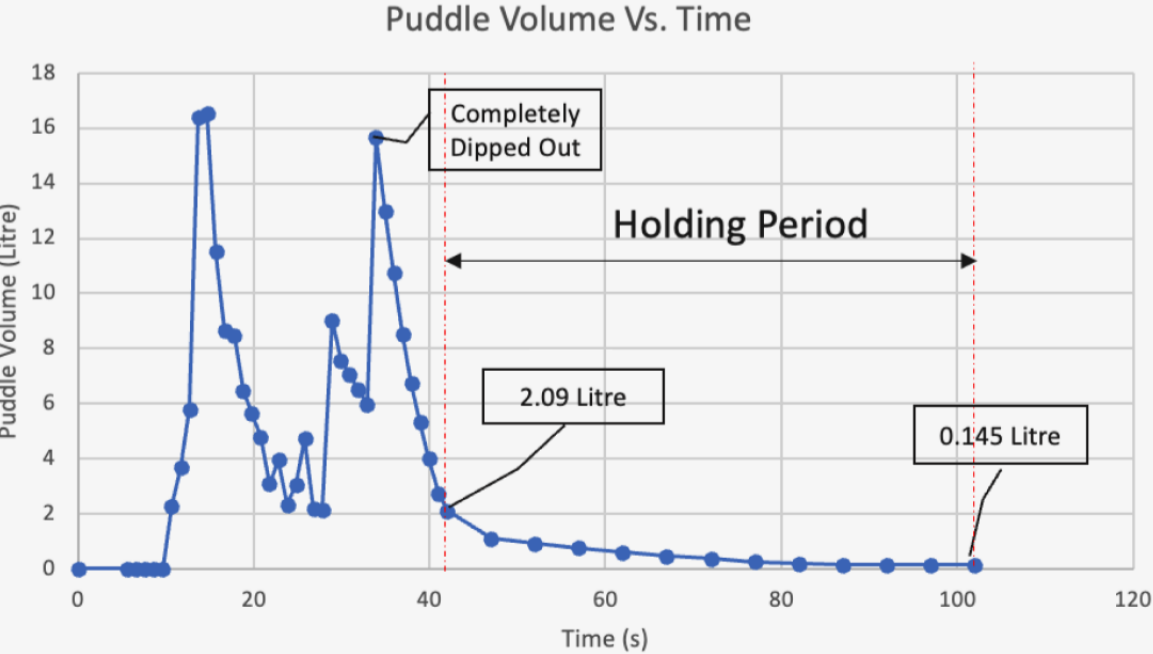
Client: Skoda Auto
 Services: alsim Paint Shop
 Time scope: 2022 – now

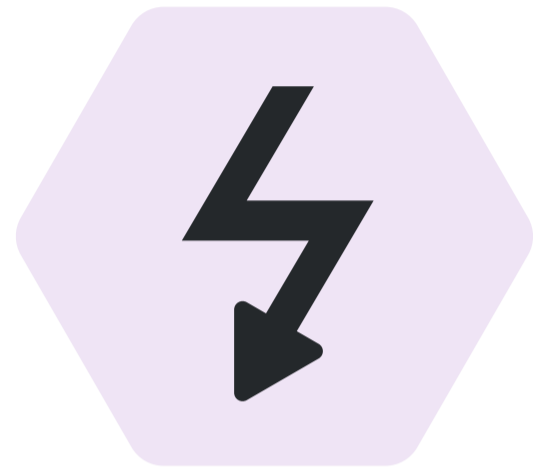
Key Successes: Huge resources savings
 And quality increase
 by integration of CFD
 In paint shop

Dip Paint Paint Puddle Results



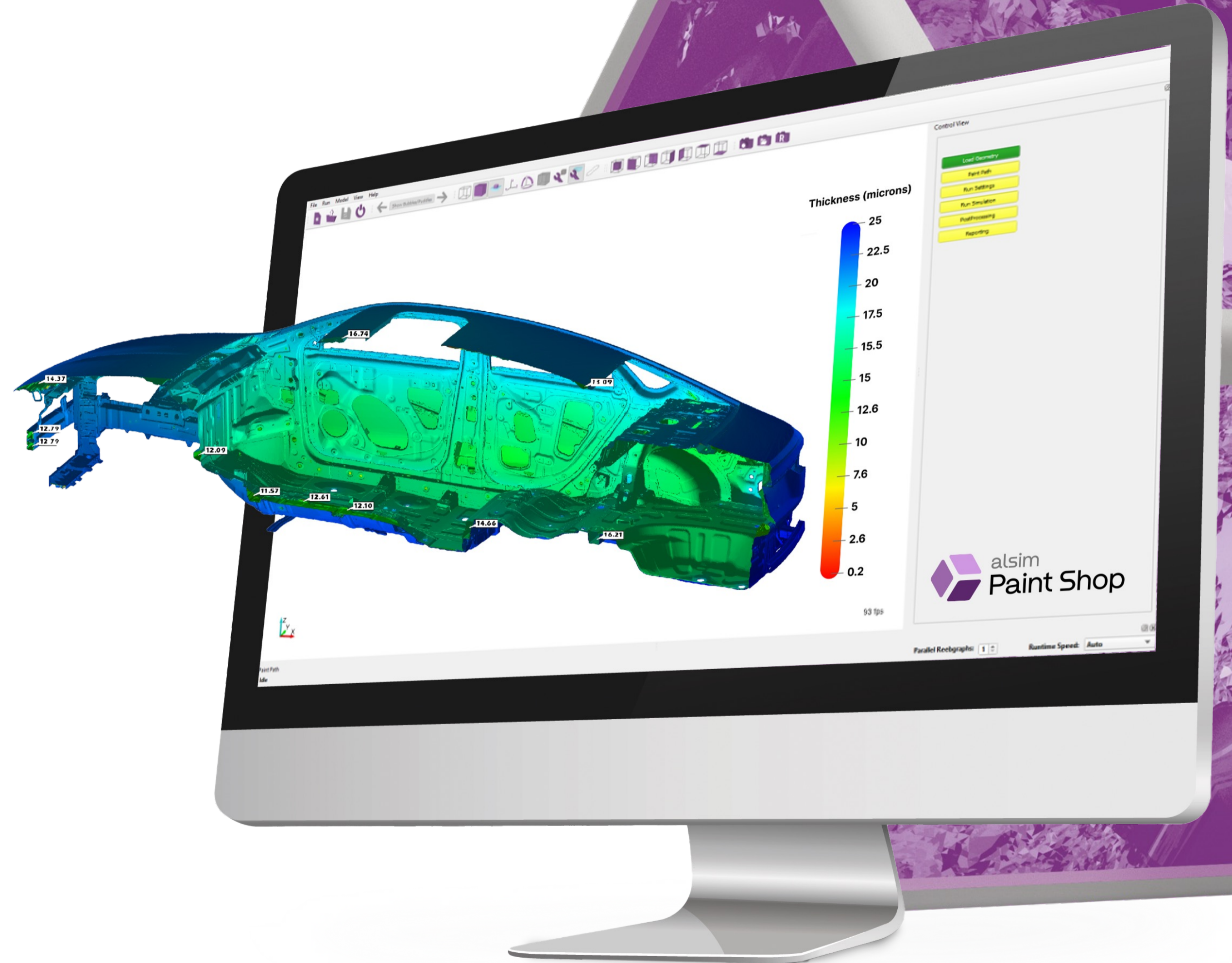
Graphical Results

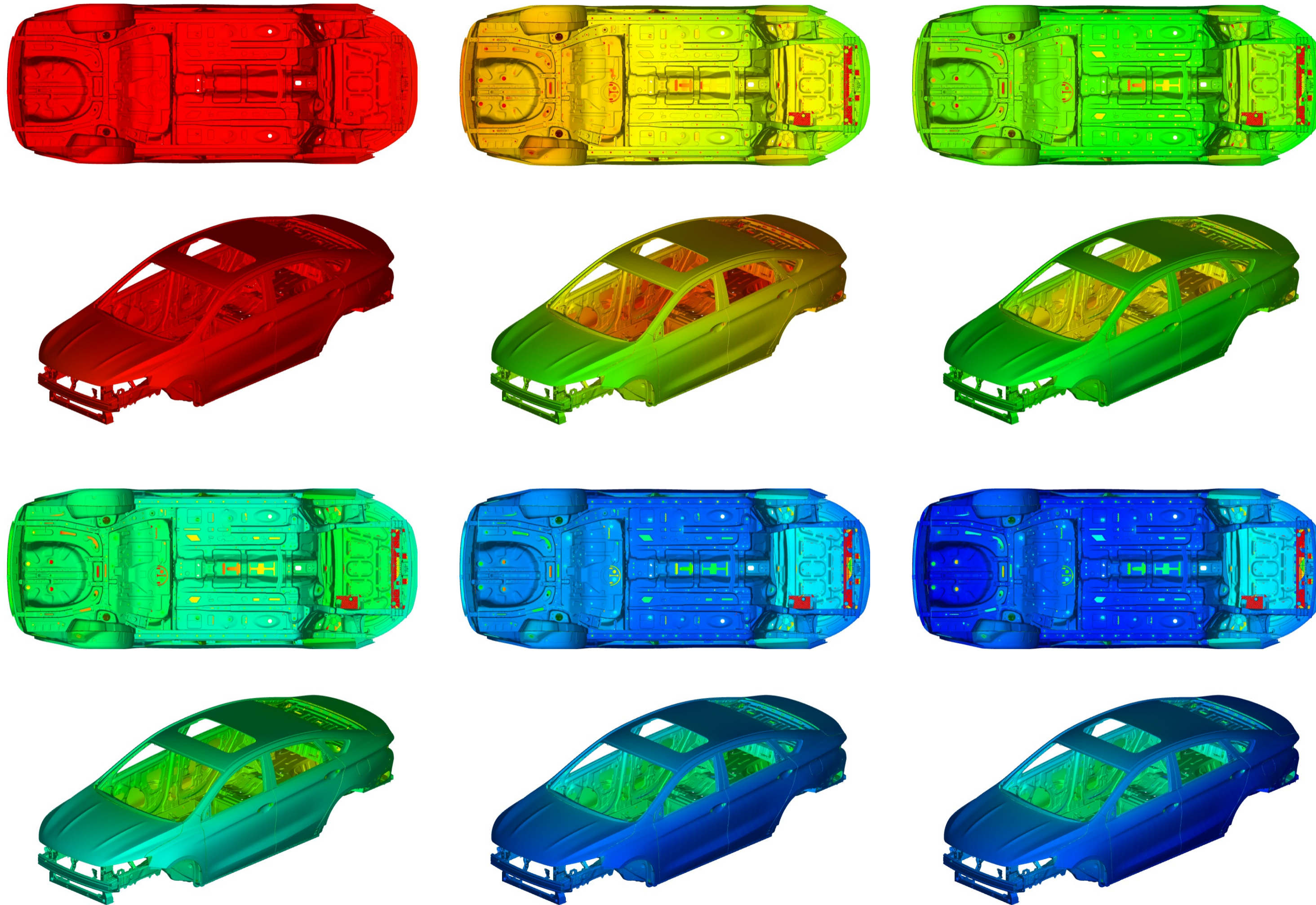




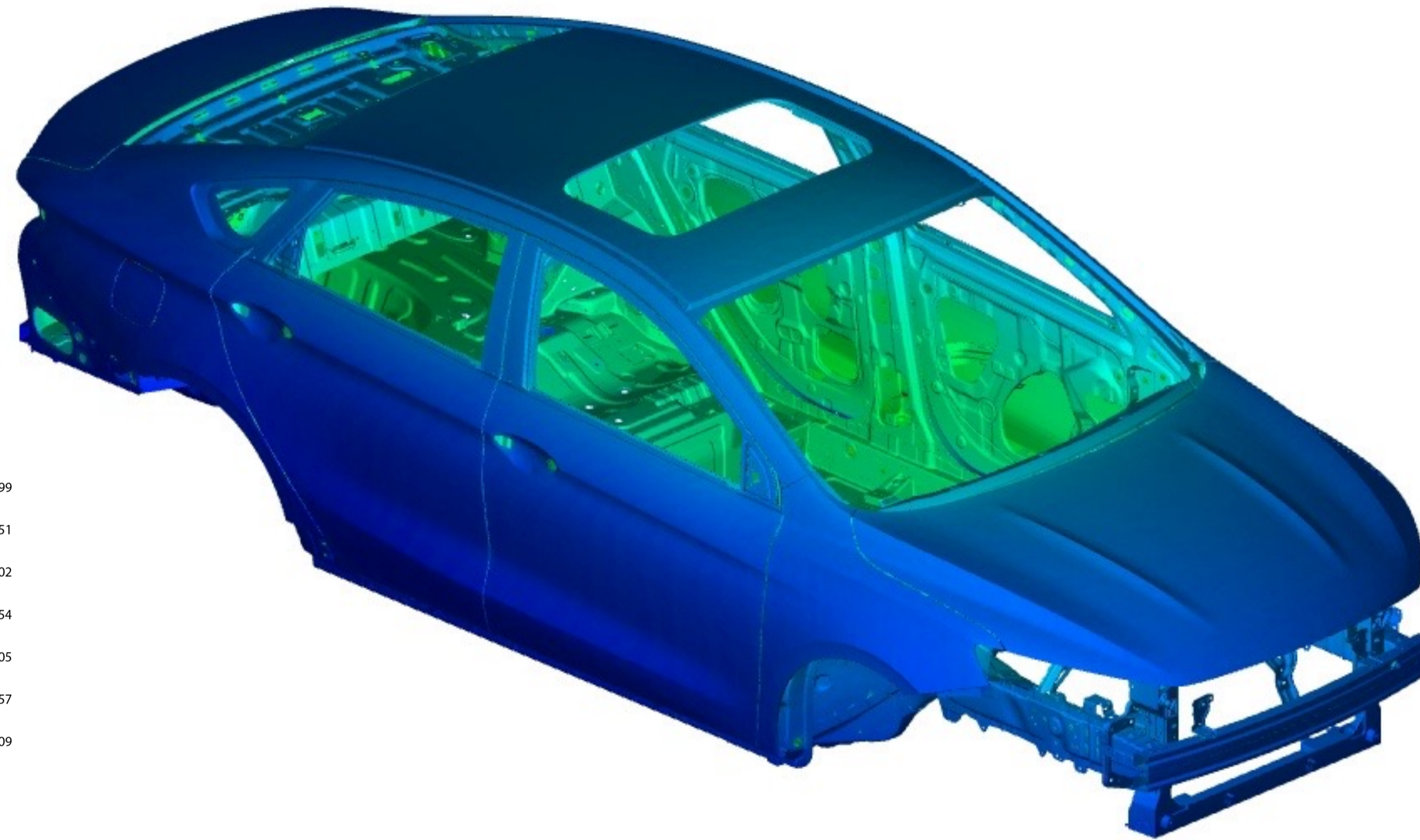
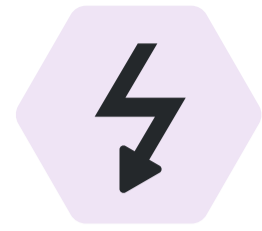
alsim paint shop
E-Coating

Flawless uniform deposition with minimum energy consumption by accurately predicting your results

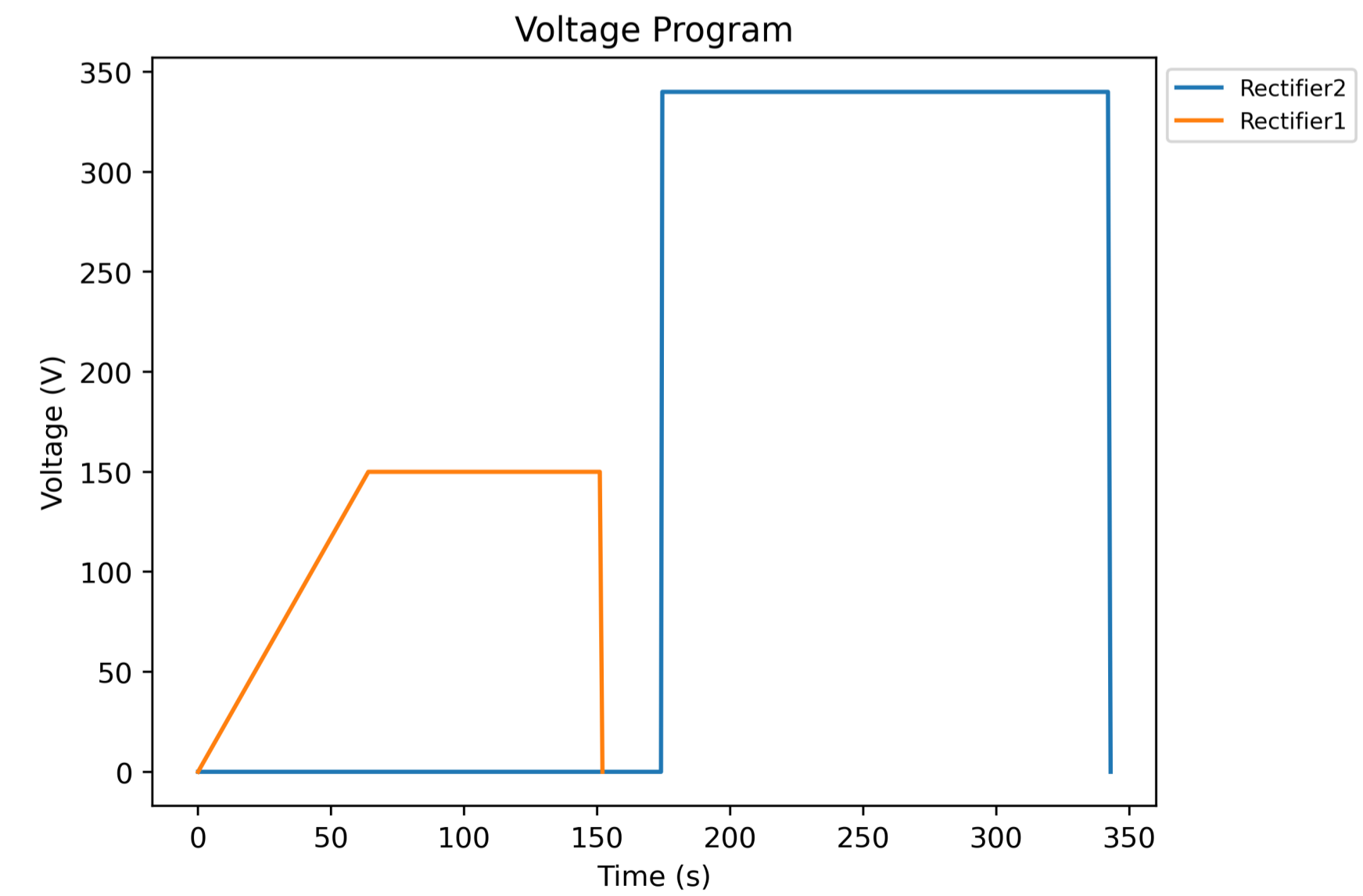
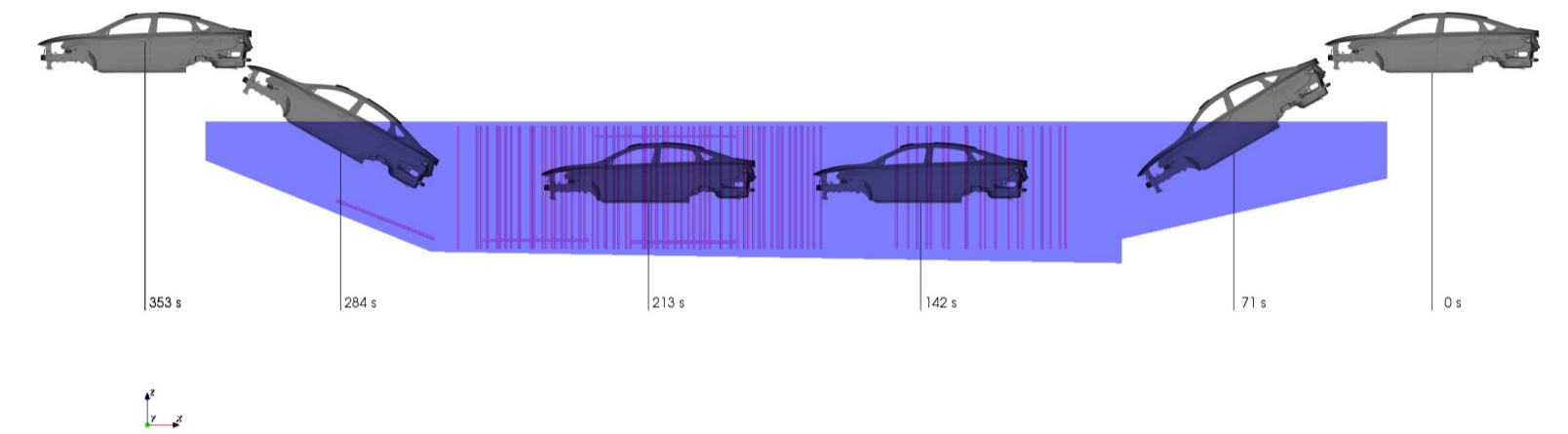
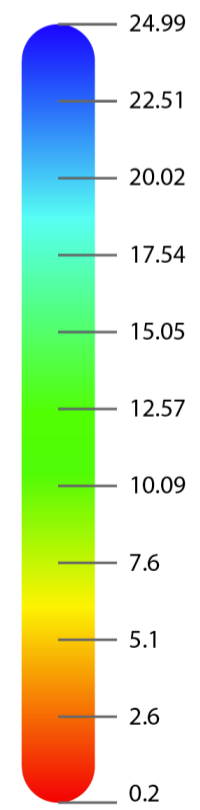


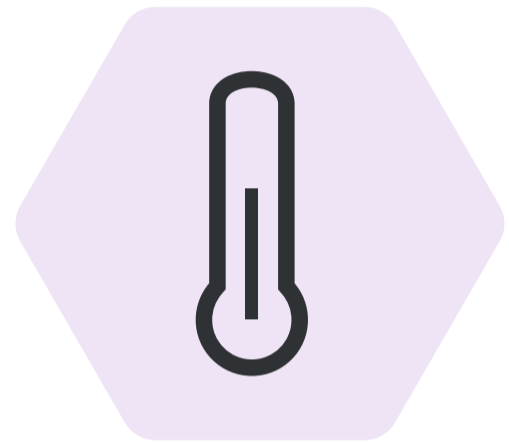


The only CFD tool in the world that is **specifically customized for E-coating** process in automotive paint shop for non-CFD users



Thickness (microns)



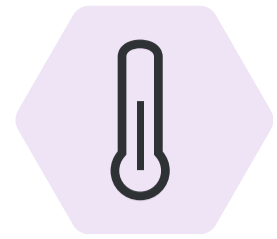


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Oven

Achieve uniform baking of all parts by perfecting your heating process





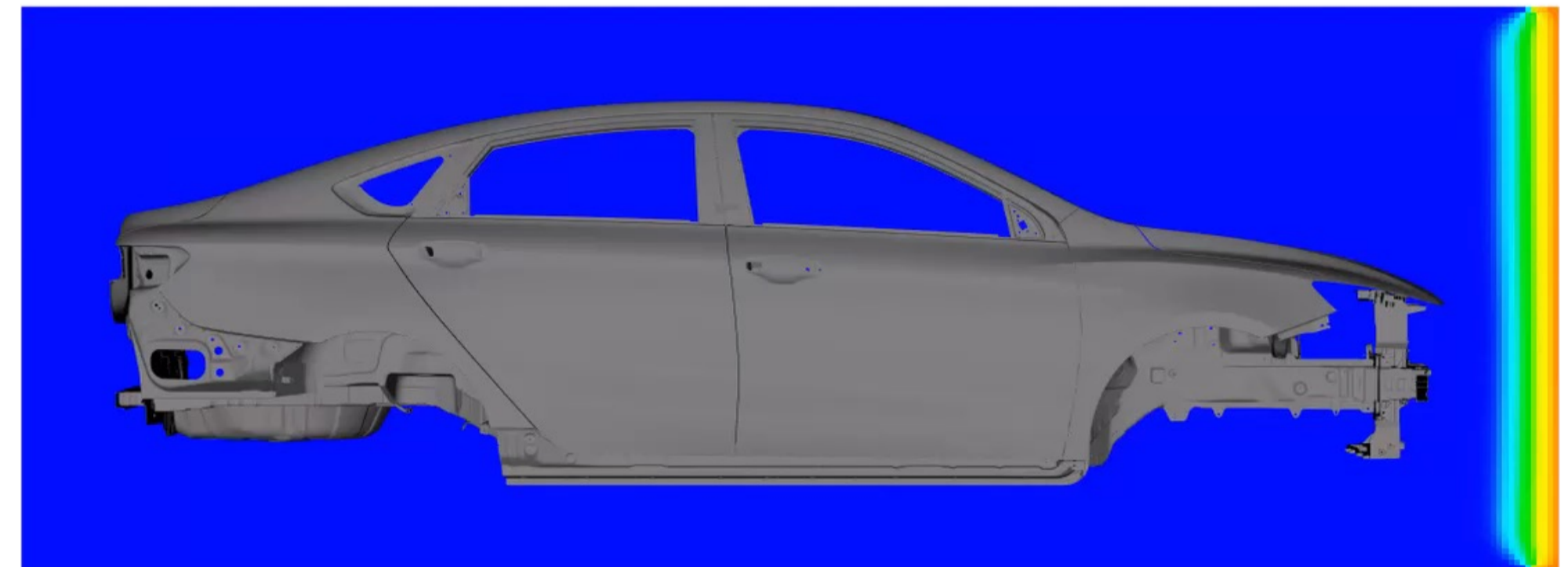
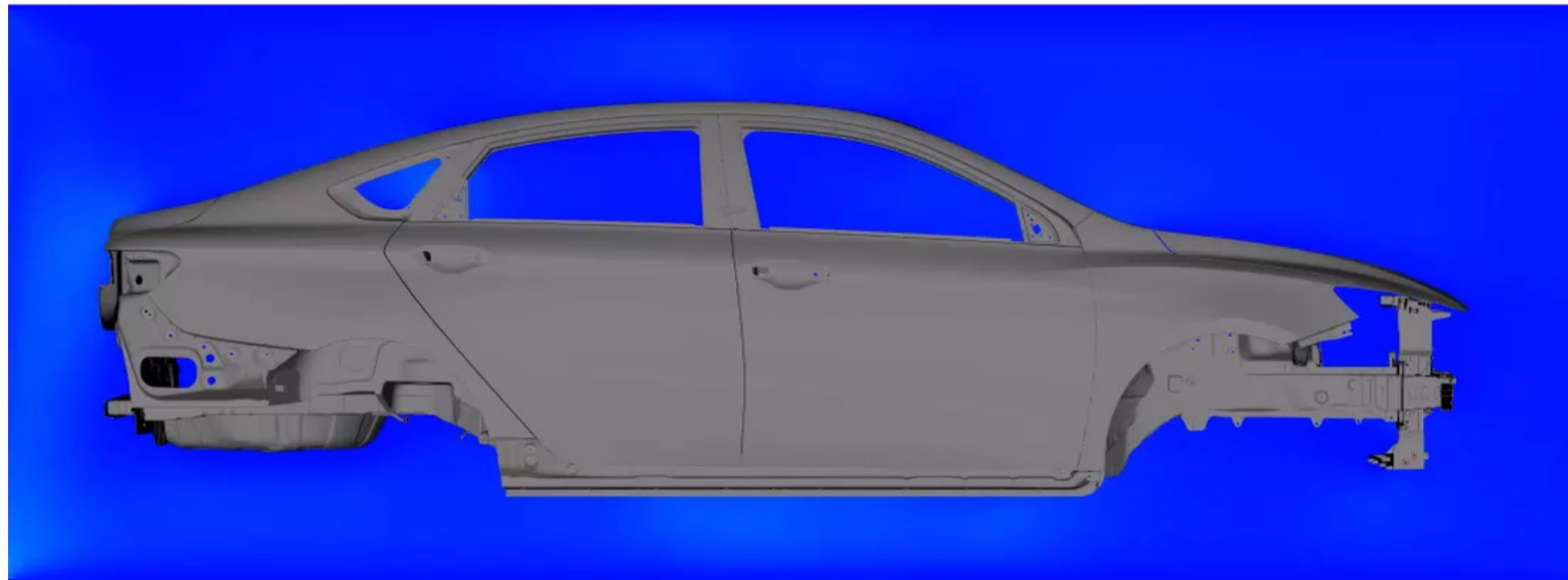
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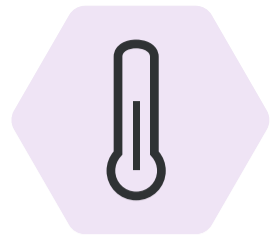
Oven

All zones of Oven (Pre-heat, Heat-up phases, Cool-down) simulated at one-go

Pre-defined parameters as per latest industry standards, with high levels of customization possible

Optimize the baking process, minimize energy consumption ensuring uniform baking across all regions

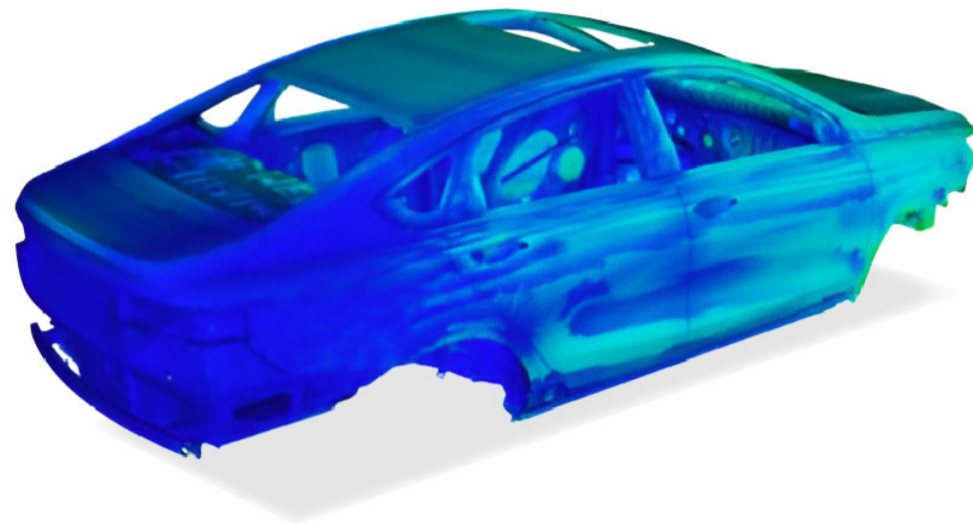




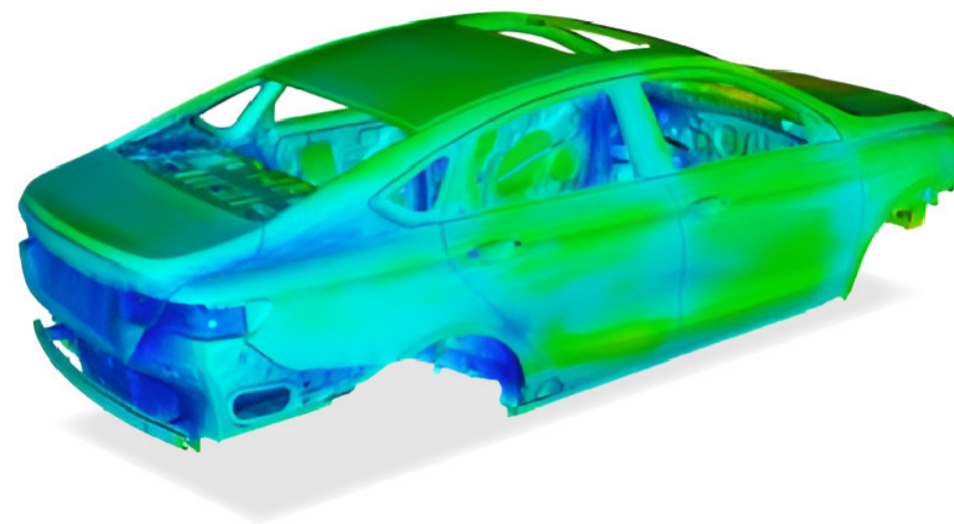
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Oven

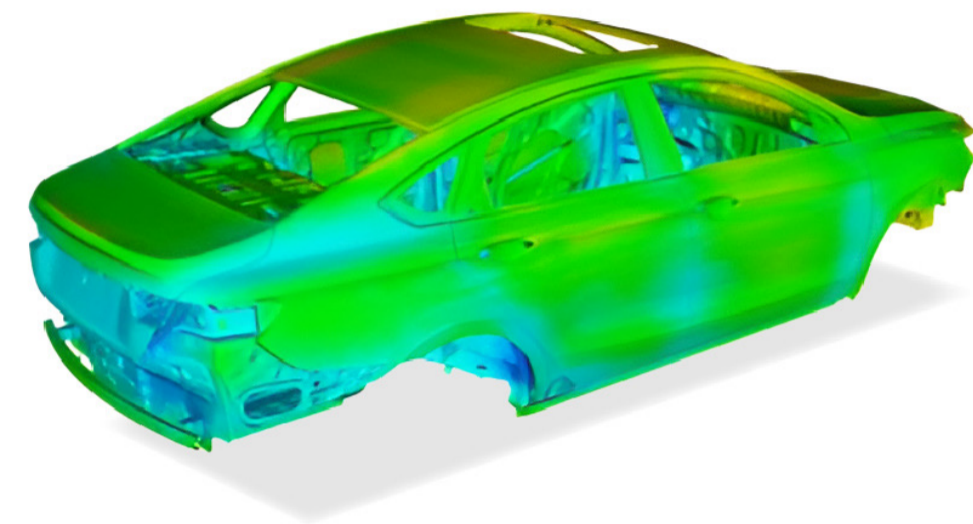
time: 60s



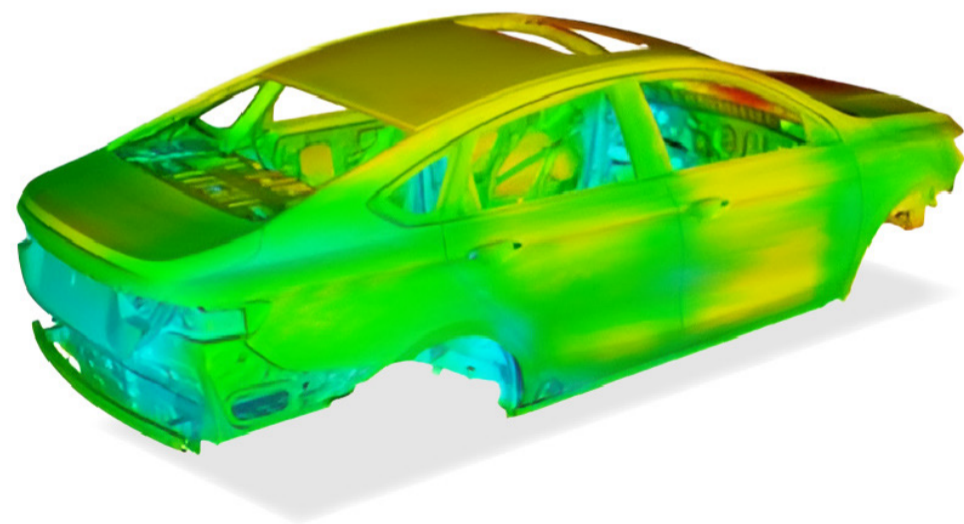
time: 120s



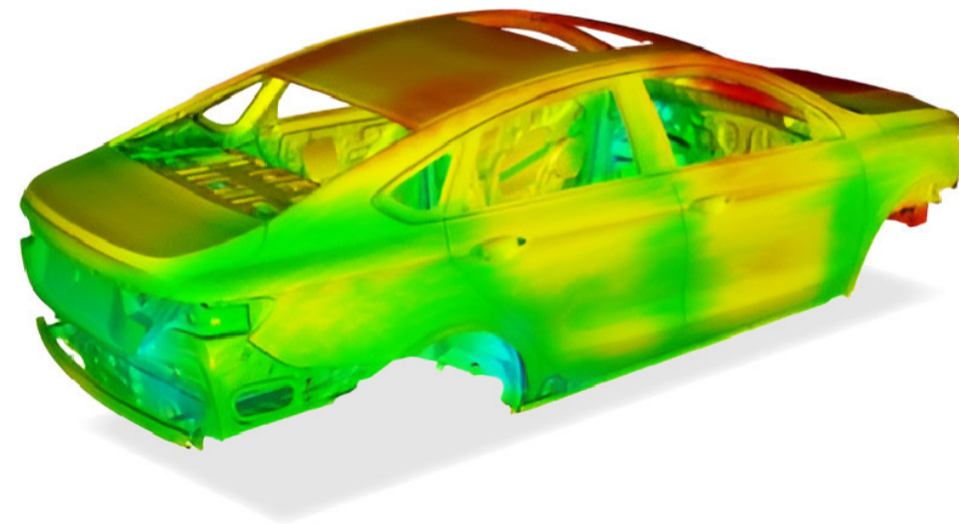
time: 180s



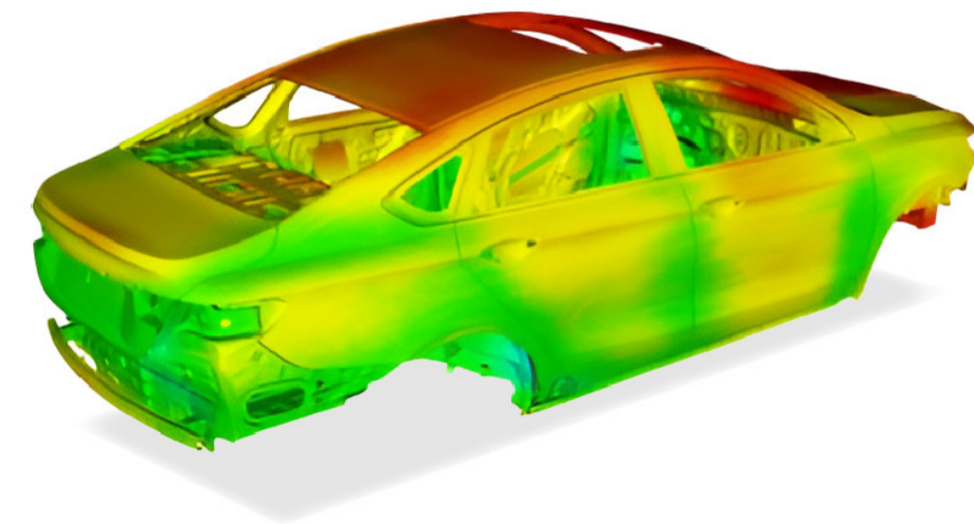
time: 240s



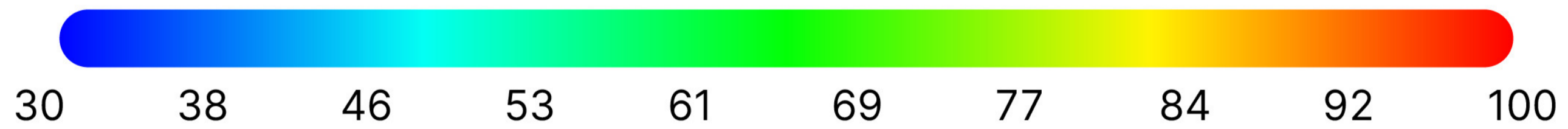
time: 300s

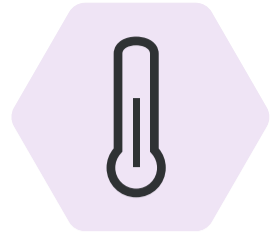


time: 350s



temperature (C)

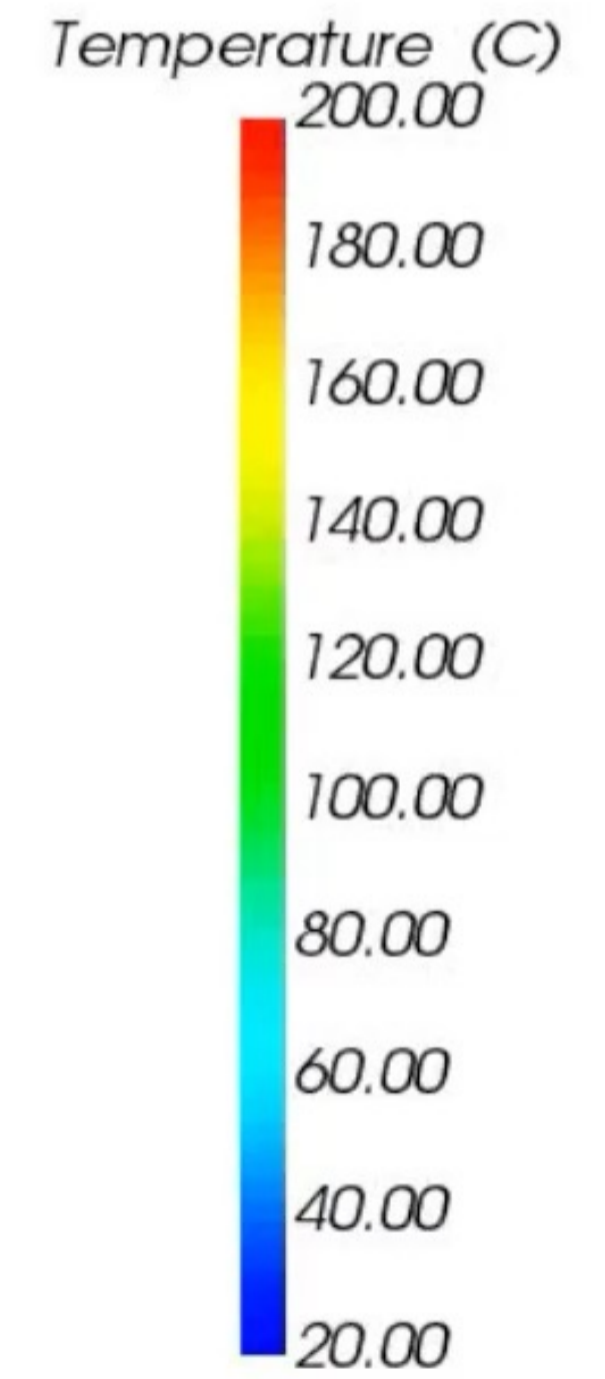
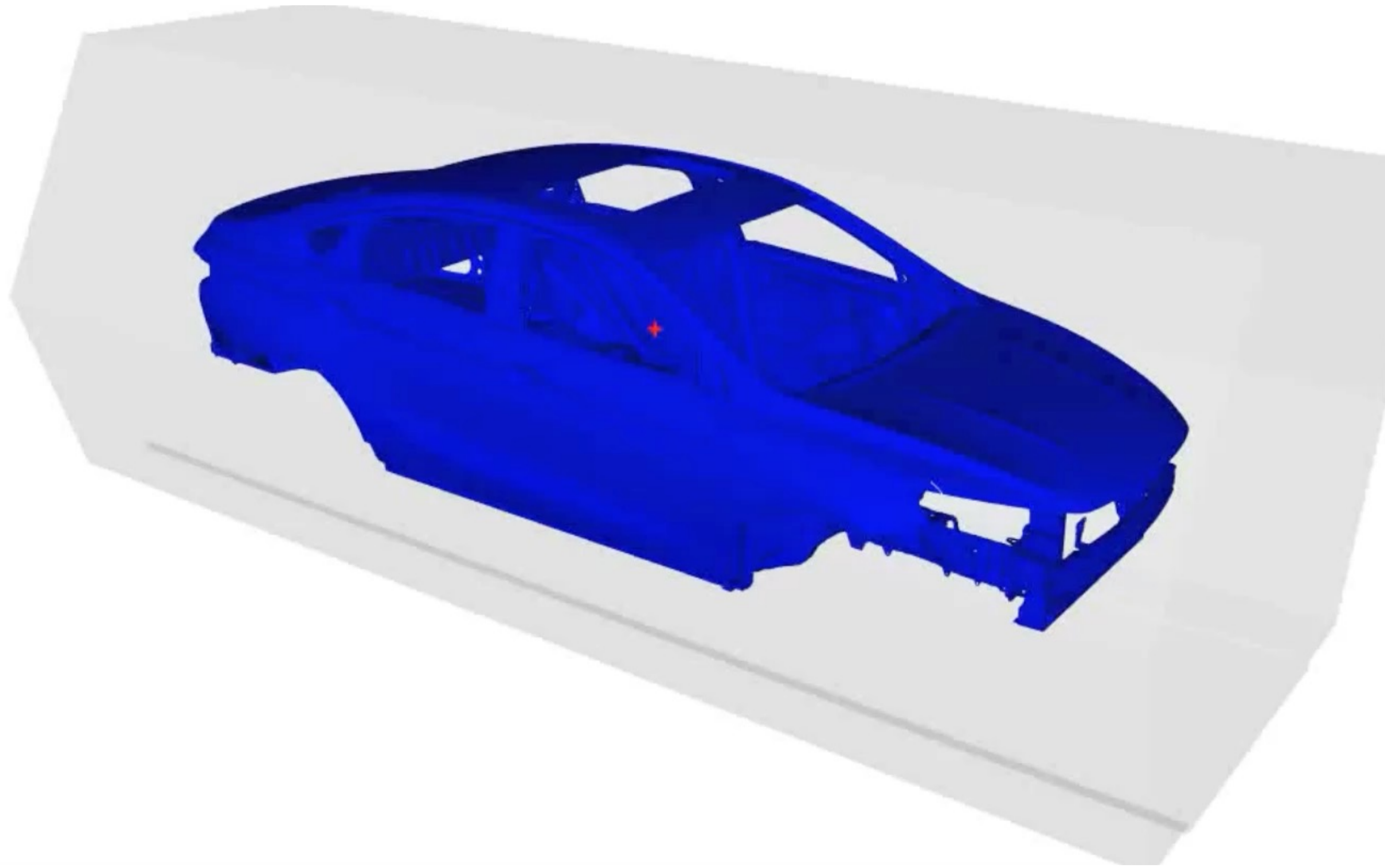


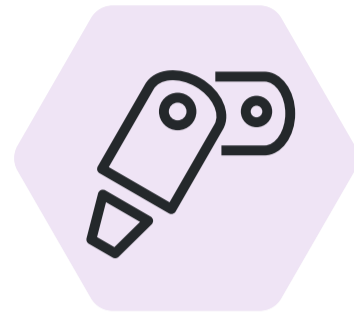


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Oven

Simulated Time: 0.000000 sec

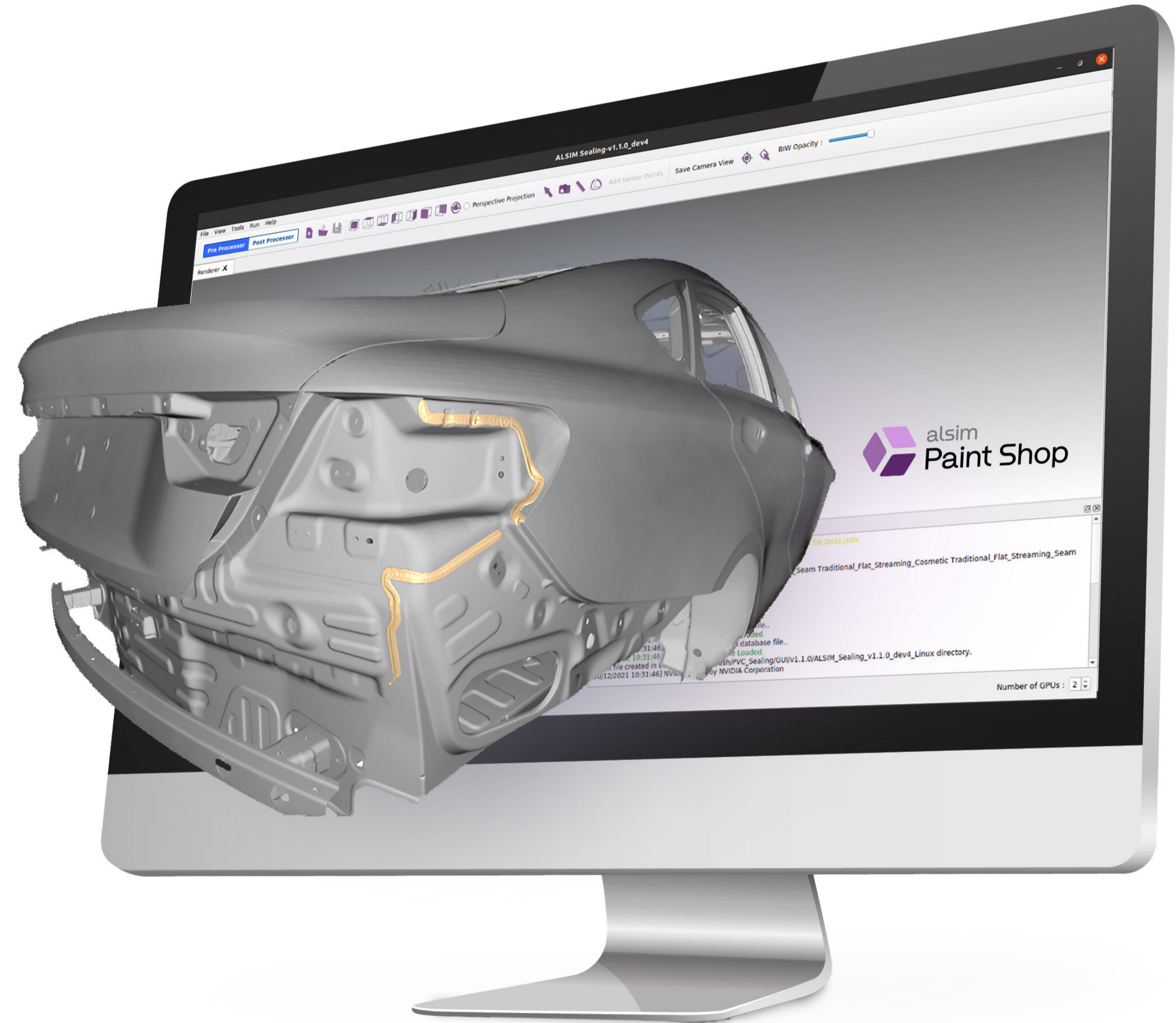




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Sealing

Gain ultimate corrosion protection with minimum material by optimizing application path and process parameters.



Why Sealing is needed

The BIW surfaces are prone to corrosion and abrasion.

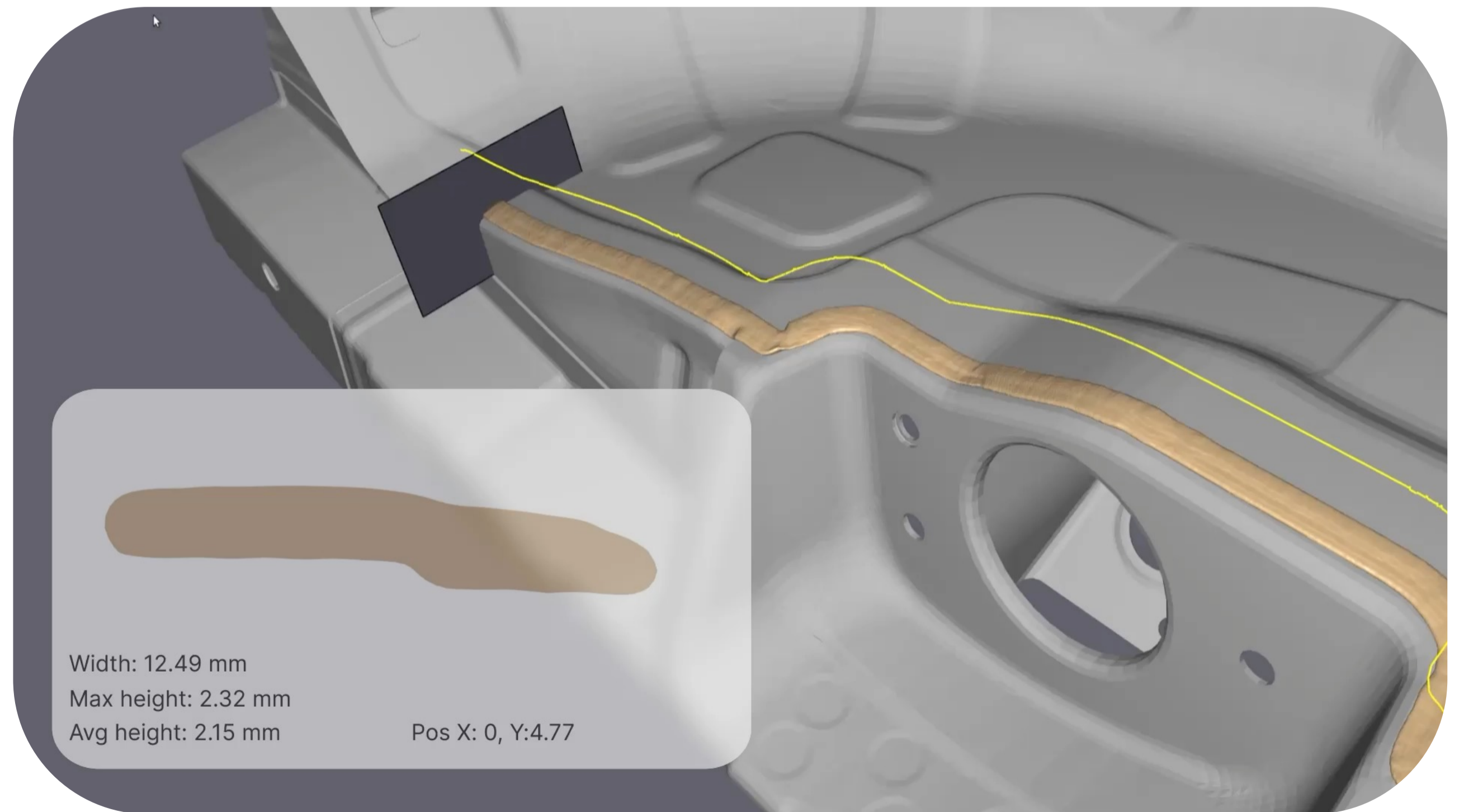
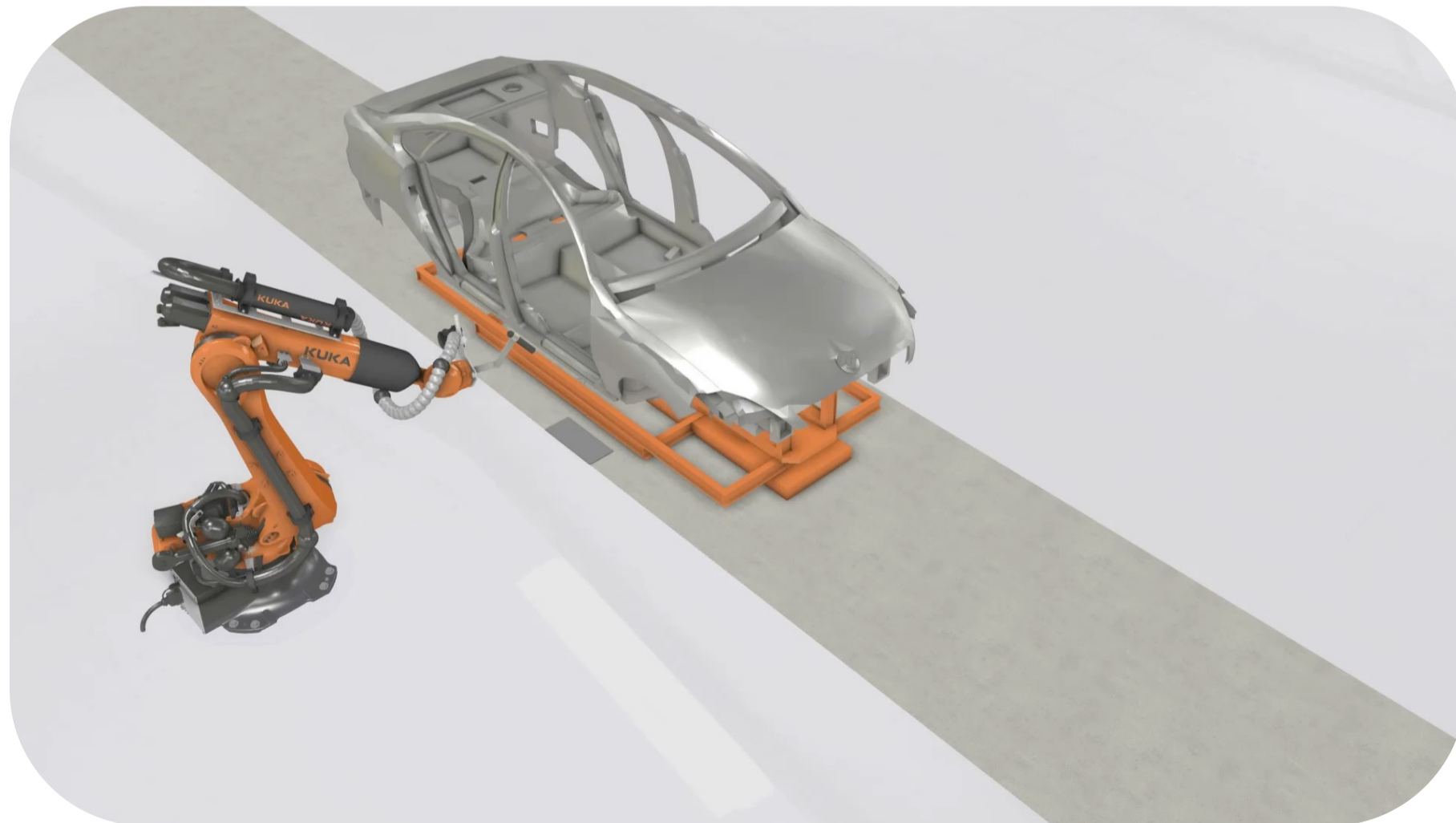


How Sealing helps

To ensure corrosion protection in paint shop process

and aesthetically close (seal) joining regions on the Body-in-White with PVC material

Optimize the robot paths
Import and Export OLPs
Predict your seals with highly
accurate simulation



Thank you



Let's Work Together



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