

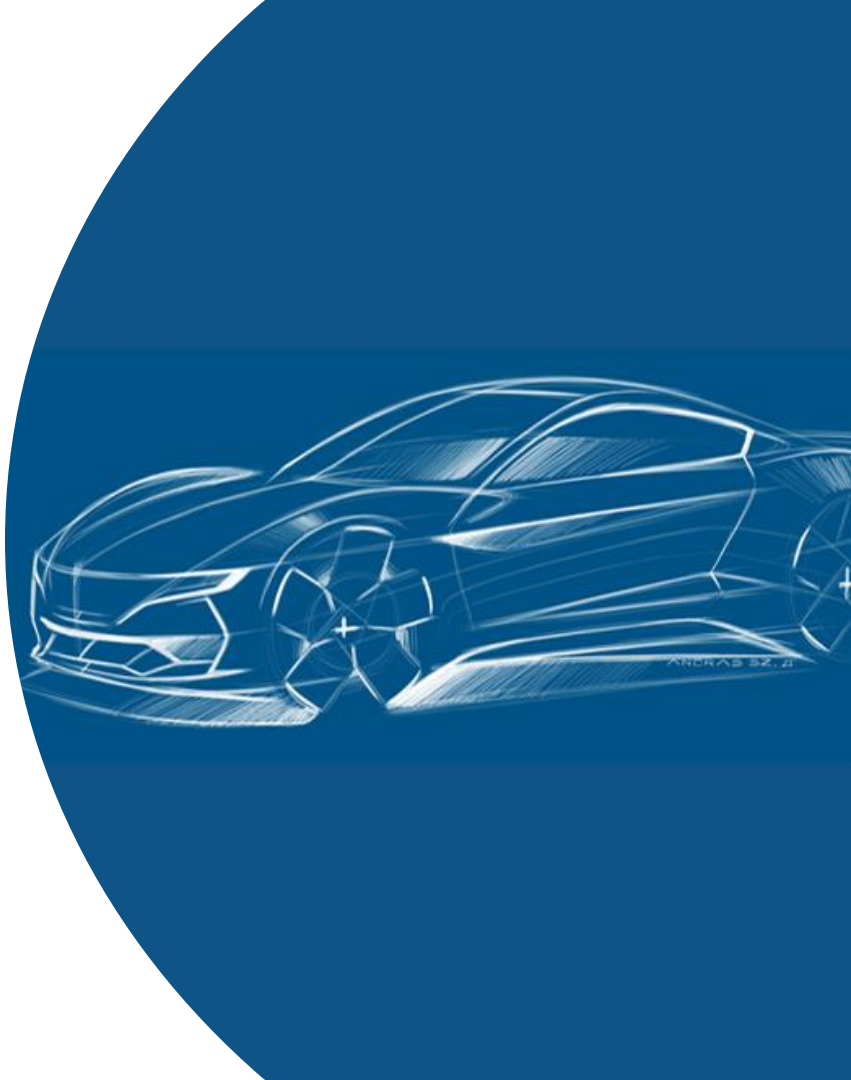


3DEXPERIENCE®

CATIA CREATIVE DESIGN

Alexander Back (systemworkx)

DS DASSAULT
SYSTEMES | The 3DEXPERIENCE® Company



3DEXPERIENCE | Platform for Design Thinking



CATIA Design

Creative Designers

CREATIVE DESIGN
from art to part



Surface Designers

SURFACE REFINEMENT
Perfection in Surface Quality



Decision Makers

PRODUCT EXPERIENCE
for decision makers



IMAGINE

Sketching
Concept Modeling
Poly-/Sub-D
xGenerative Design
Human Design
...

CREATE

Surface Modeling
Class-A
Strak
Reverse Engineering
...

EXPERIENCE

Visualization
Rendering
Virtual Reality
Realtime
Materials
Immersive
Collaboration
...

CATIA Design

Creative Designers

CREATIVE DESIGN
from sketch to part



Surface Designers

SURFACE REFINEMENT
Perfection in Surface Quality



Decision Makers

PRODUCT EXPERIENCE
for decision makers



IMAGINE

Sketching
Concept Modeling
Poly-/Sub-D
xGenerative Design
Human Design
...

CREATE

ICEM
Surface Modeling
Class-A
Strak
Reverse Engineering
...

EXPERIENCE

Visualization
Rendering
Virtual Reality
Materials
Immersive
Realtime
Collaboration
...

CATIA Creative Design Experience | Surface Refinement

Continuity & Innovation

ICEM Surf

The art of surface modeling

Standalone



Best in class explicit workflow

Pure Explicit Modeling

ICEM Design eXperience

Innovative modeling User Experience

3DXP



New User Experience

Direct modeling

Soft Parametric

Surf & Curve based

CATIA Icem

Empowered Surface modeling

V5 & 3DXP



Capture & re-use

Parallel Commands

Associativity & Explicit

Integrated workflow

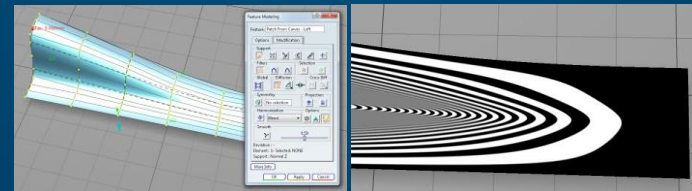
From explicit to Associative & integrated Class-A modeling

CATIA Icem

Perfection in Surface Quality

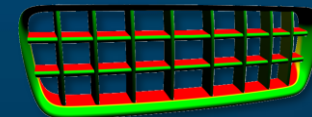
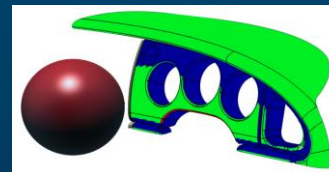
Explicit AND/OR Associative Class-A Surface Modeling

Embedded approximation
Managed deviation
Feature Modeling



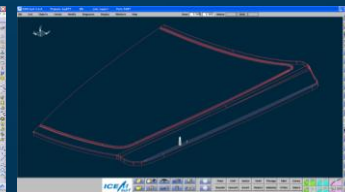
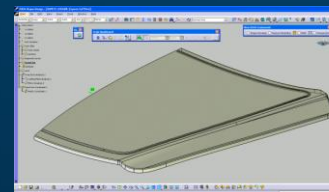
Specialised Surf modeling Features & Diagnostic

Expert features : Helix, Gap Surfaces, Accelerated Surfaces, Loft Surfaces, Tubing, **Advanced analysis** : Flat Region, Head impact, Gap, Leveling, Surface Checker



Bi-directional interoperability between CATIA & ICEM Surf

Native files formats, Smart data exchange & Official DS data exchanges



CATIA ICEM – Grey Zone Modeling

► Grey Zone

...Defined as All areas of a car which will be visible when opening doors and flaps

► Challenges

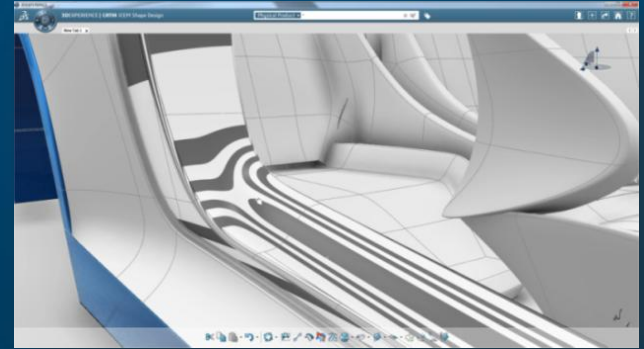
- ❑ Greyzone areas need to reflect the high level of surfacing on the exterior while combining aesthetics with mechanical, manufacturing and functional aspects
- ❑ The surfacing quality of the Greyzone should be in line with the exterior and interior of the car in order to raise the overall perceived quality by customers

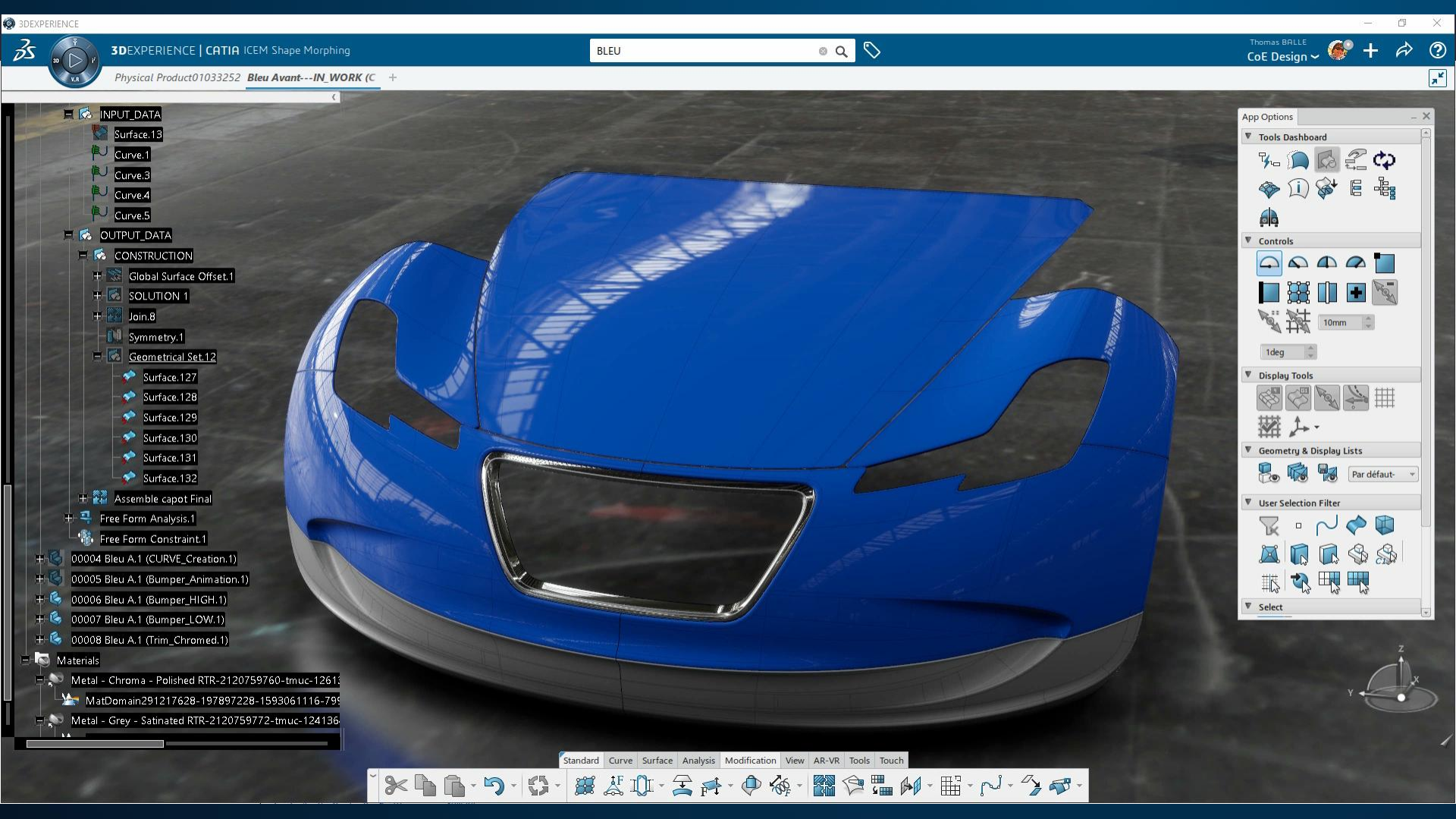


CATIA ICEM – Grey Zone Modeling

Benefits of CATIA ICEM

- ❑ A full CATIA integration
- ❑ Simplification and improvement of external input geometry thanks to advanced conversion & smoothing functionalities
- ❑ Using approximation capabilities to allow the creation of Class A type geometry even if the input is of low geometrical quality
- ❑ Feature based modelling allows for instantaneous changes





CATIA Creative Design Experience | Surface Refinement Continuity & Innovation

ICEM Design eXperience

Innovative modeling User Experience



New User Experience

Direct modeling

Soft Parametric

Surf & Curve based

ICEM Design Experience

The new generation of surface modeling for CAS & Class-A

A New Level of **Productivity, Innovation** and **Collaboration**

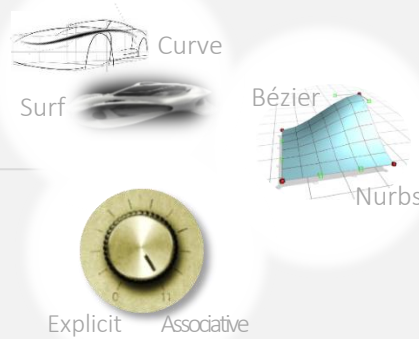
MODELING APPROACH

Visual
Excellence

SURFACE CONTROL

SOFT PARAMETRIC (LA)

Sculpting
User Experience



ICEM Design Experience

The new generation of surface modeling for CAS & Class-A

A New Level of **Productivity**, **Innovation** and **Collaboration**

PRODUCTIVITY

Direct modeling UX:

All needed available from 3D space

Modeling Performance:

realtime shaping & analysis

Workflows performance:

#mouse miles/#clicks vs muscle memory

Parallel commands:

quick access all time to Display /
Navigate / Organize / Controls

Class A quality:

generated shapes must provide
compliant CP network

INNOVATION

New Controls:

relevancy vs diagnosing shape

Workflows:

new methodologies to be invented

CATIA hybrid modeler:

satisfy both Beziers & Nurbs surf
modelers

Soft parametric:

Shape vs tolerance
Conservative update

New reality:

Design in built-in Visual & VR experience

COLLABORATION

3DEXPERIENCE Platform based:

Geometry continuity + Collab tools

Training:

Quick « I feel home » feeling expected

Mentoring:

Smart (and not savage) level of
customization of IDX app

Trace-ability:

Transfer work from user to another and
direct carry-over

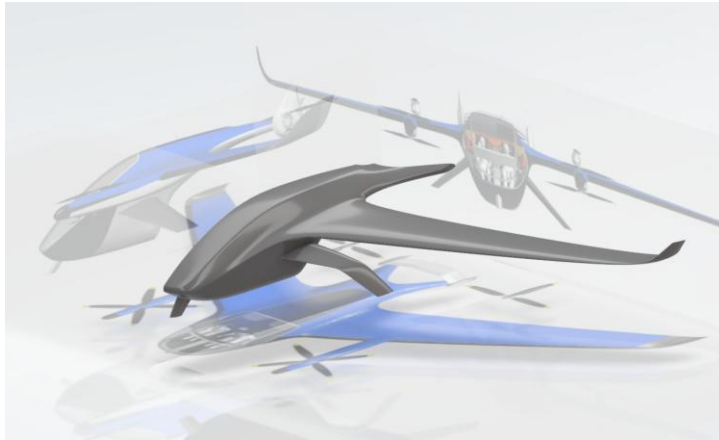
Live Review:

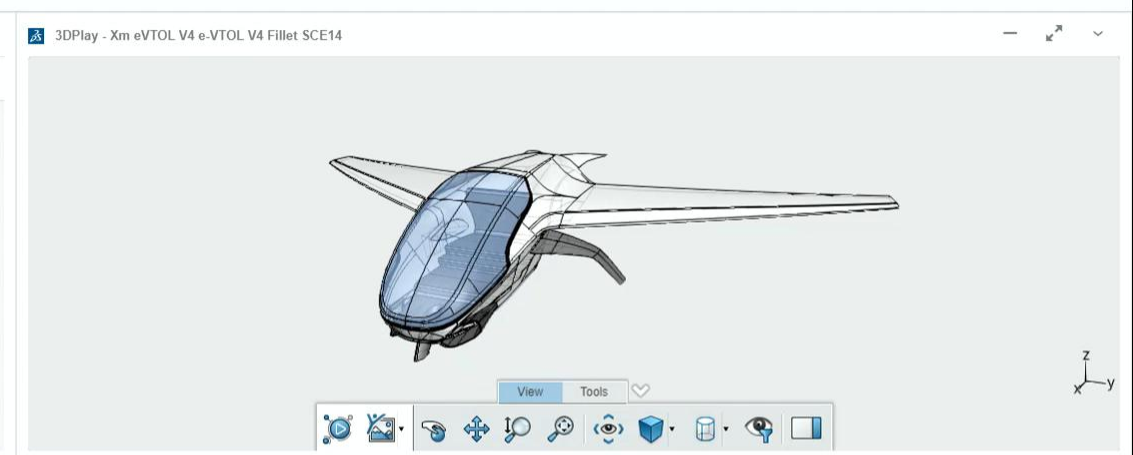
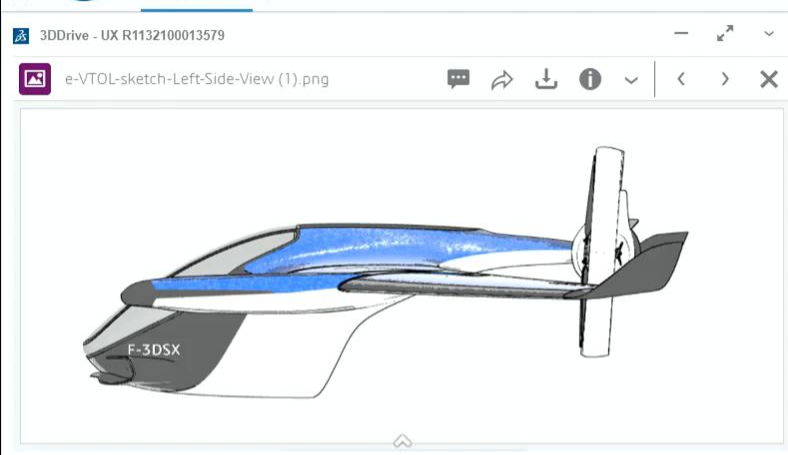
Benefit from 3DEXPERIENCE
high-end viz tools (realistic, VR, PPX)

ICEM design eXperience | the next generation of surface modeling for CAS & Class A

A new level of Productivity, Innovation and Collaboration

CAS concept modeling – Class-A surface modeling





Web Page Reader

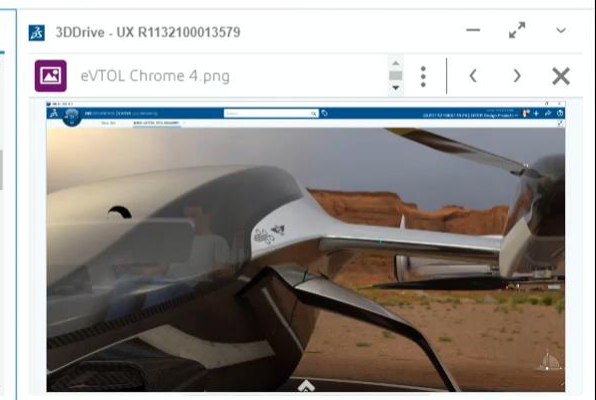
marché pour l'instant. C'est pour cette raison que la première société qui s'implantera avec succès sur le marché aura un avantage significatif en termes de publicité, d'investissement et de reconnaissance de marque.

Toutefois, la conception de ces véhicules révolutionnaires s'accompagne de défis de taille, concernant notamment le bruit, les limitations de la batterie, la sécurité et la gestion du trafic aérien. Fort de 40 années d'expérience dans le développement de technologies pour l'aéronautique, le groupe Dassault Systèmes est parfaitement à même d'aider les fabricants de véhicules eVTOL à résoudre ces problèmes à mesure qu'ils progressent pour réinventer le transport aérien.

Infographie eVTOL

Communauté

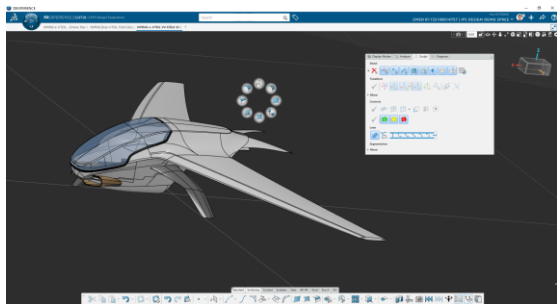
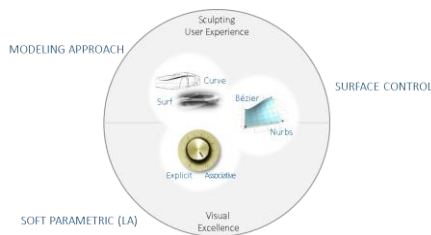
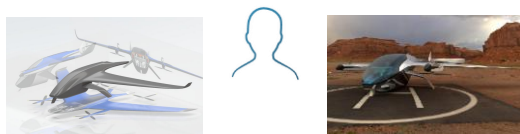
+800 379 78 362



A new level of Productivity, Innovation and Collaboration

ICEM Design eXperience

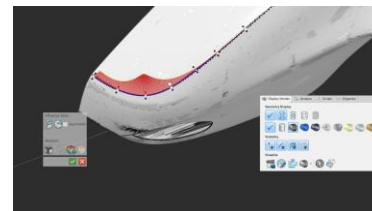
for both CAS & Class A modelers...



with a dedicated User eXperience

- sculpting : take benefit of legacy & innovative tools
- display : native high-end level of visualization (including VR) & realtime diagnosis

Reverse engineering



- Accelerate feasibility data creation

Complete modelling freedom..

- both Bezier & Nurbs at any time
- mixed Curve & Surface approaches
- natively integrated with subdivision surfaces & solid modeling



High quality Visualisation

- Instant access to real-time rendering
- Integrated immersive VR Review

