pixyz
GET CAD DATA READY
FOR NEW EXPERIENCES

pixyz

DEVELOPS STATE-OF-THE-ART ALGORITHMS FOR **CAD PREPARATION**, **OPTIMIZATION** & **VISUALIZATION**

TODAY

2020

MORE THAN

280

CUSTOMERS WORLDWIDE

PARIS
COMPIEGNE
MONTREAL

MULTI SKILLED

CAD
xR technologies
Realtime rendering
AI, ML & DL

STAFF

24

unity

PARTNER
SINCE MARCH 2018

Over 140

ALGORITHMS DEDICATED TO **DATA PREPARATION** & **OPTIMIZATION**

WHY IS IT A CHALLENGE TO USE CAD IN REAL-TIME 3D EXPERIENCES?

CAD MODELER

LARGE ASSEMBLIES

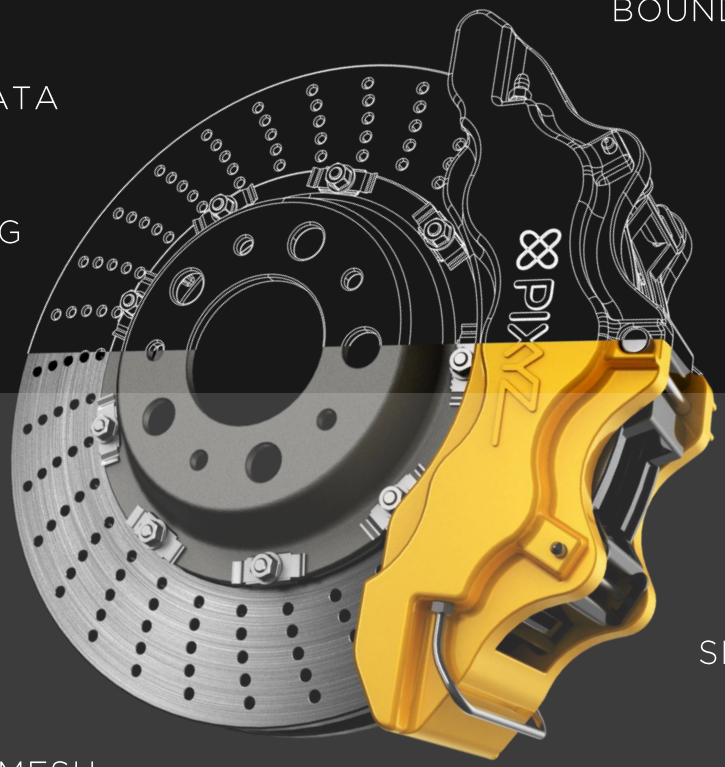
EXACT MATHEMATICAL GEOMETRIES
BOUNDARY REPRESENTATIONS

METADATA

DESIGN PRODUCT STRUCTURE

PRODUCT MODELING
INFORMATION

PHYSICS PROPERTY
MATERIALS



DIGITAL CONTINUITY

REAL-TIME 3D

MATERIALS & UVs

MULTI-PLATFORM

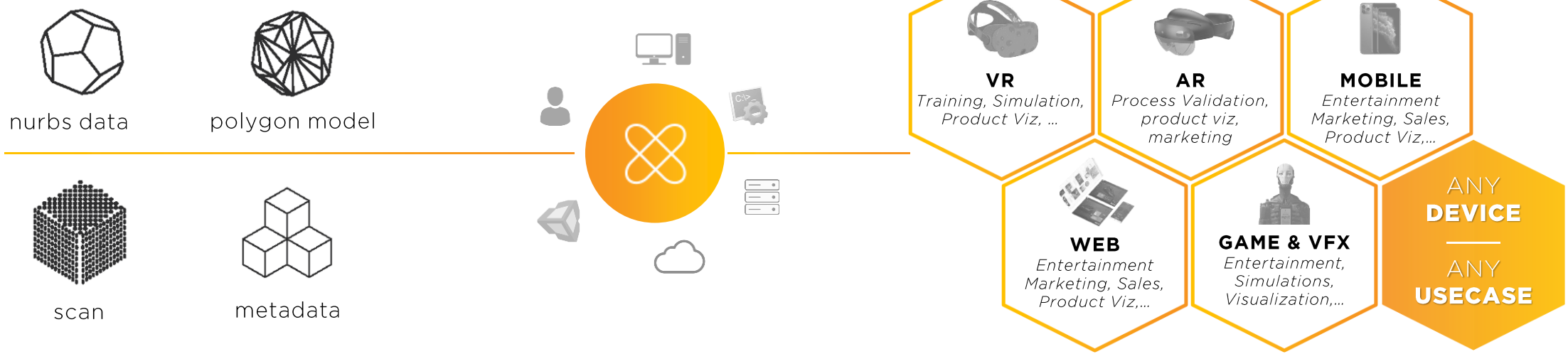
SIMPLIFIED HIERARCHY & ASSEMBLY

OPTIMIZED MESH

REAL-TIME ANIMATION

UNLOCK CAD DATA FOR REAL-TIME 3D EXPERIENCES

PiXYZ centralize the data preparation addressing directly any business case with automated processing



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PARTNERSHIP FOR INDUSTRY

25+
Platforms Supported

1M+
Monthly Active Developers

1B+
Devices Reached Monthly

Strategic Reseller Agreement – March 2018

Unity and PiXYZ software have joined forces to provide large enterprises and individual professionals alike with best-in-class solutions to easily import and optimize CAD data for creating real-time experiences in Unity

PRESS RELEASE

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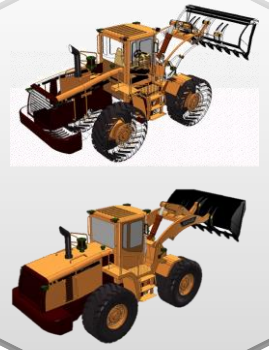
CORE TECHNOLOGY

PiXYZ TECHNOLOGY

CAD & 3D I/O

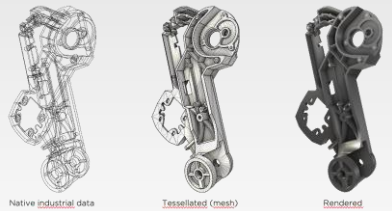
CAD & MESH REPAIR



POINT CLOUDS

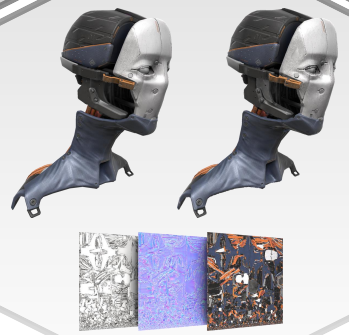
INTEGRATED WORKFLOWS

TESSELLATION

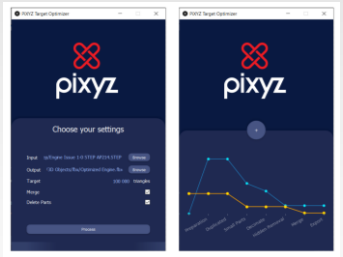


MESH SIMPLIFICATION

LOD - REMESHING - BAKING



TARGET OPTIMIZER



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PiXYZ TECHNOLOGY

CAD & 3D FILES IMPORT AGNOSTIC

One thing all PiXYZ products share is a high-performance core that combines fast processing speed, the ability to handle massive assemblies, and the ability to use data from virtually any common design system. Whether you're working with a complete automotive powertrain assembly in NX, a large architectural curtain wall in CATIA, or manufacturing equipment in Inventor, Unity with PiXYZ has you covered.
More details available here: http://bit.ly/3c5M3uy_PiXYZ_supported_formats_2020

FORMAT	EXPORT (6)		
	VERSION	EXTENSIONS	TESSELLATION
Autodesk FBX	Versions 2011 to 2017 (7)	FBX	●
CATIA V5 [3DXML]	v4.2	3DXML	●
COLLADA	1.5 (2008)	DAE	●
glTF	2.0	GLTF, BIN	●
JT	v9.5	JT	Dev/Beta
OBJ	All Versions	OBJ	●
PDF	All Versions	PDF	●
PRC	All Versions	PRC	●
Stereo Lithography (STL)	All Versions	STL	●

Available output formats (« Export »)

FORMAT	IMPORT				
	VERSION	EXTENSIONS	TESSELLATION	BREP	PMI
PiXYZ	All Versions	PXZ	●	●	●
ACIS	Up to 2018.1 (R28)	SAT, SAB	○	●	○
AutoCAD 3D	Up to Version 2018	DWG, DXF	●	●	○
Autodesk Alias (1)	Up to Version 2016	WIRE	○	●	○
Autodesk FBX	Versions 2011 to 2017	FBX	●	●	○
Autodesk Inventor	Up to 2018	IPT, IAM	●	●	○
Autodesk VRED (5)	VRED license required	VPB	●	●	○
CATIA V4	Up to 4.2.5	MODEL, SESSION	○	●	●
CATIA V5	Up to V5-6 R2018 (R28)	CATPart, CATProduct, CATShape, CGR	●	●	●
CATIA V5 [3DXML]	Up to V5-6 R2018 (R28)	3DXML	●	●	●
CATIA V6 [3DXML]	Up to 2013x	3DXML	●	●	●
Creo - Pro/E	Pro/Engineer 19.0 to Creo 5.0 Beta	ASM, NEU, PRT, XAS, XPR	○	●	●
COLLADA	1.5 (2008)	DAE	●	●	○
CSB Deltagen (2)	Up to Version 2018	CSB	Dev/Beta	Dev/Beta	○
glTF	2.0	GLTF	●	○	○
IFC (3)	IFC2x Editions 2, 3 and 4	IFC	●	●	○
IGES	5.1, 5.2, 5.3	IGS, IGES	○	●	○
JT	Up to v10.0	JT	●	●	●
OBJ	All Versions	OBJ	●	○	○
Parasolid	Up to v30.1	X_B, X_T, P_T, P_B, XMT, XMT_TXT, XMT_BIN	○	●	○
PDF	All Versions	PDF	●	●	●
PLM XML	6	PLMXML	●	●	○
PLY	1.0	PLY	●	○	○
Point Cloud (4)	1.0 (E57)	E57, PTS, PTX, XYZ	Points	○	○
PRC	All Versions	PRC	●	●	●
Rhino3D	4, 5	3DM	●	●	○
SketchUp	Up to Version 2017	SKP	●	○	○
Solid Edge	V19 - 20, ST - ST10	ASM, PAR, PWD, PSM	●	●	●
SolidWorks	From 97 up to 2018	SLDASM, SLDPRT	●	●	●
STEP	AP 203 E1/E2, AP 214, AP 242	STP, STEP, STPZ, STEPZ	●	●	●
Stereo Lithography (STL)	All Versions	STL	●	○	○
U3D	ECMA-363 (1st, 2nd and 3rd editions)	U3D	●	○	○
Unigraphics-NX	V11.0 to NX 12.0	PRT	●	●	●
VDA-FS	Version 1.0 and 2.0	VDA	●	●	○
VRML	V1.0 and V2.0	WRL, VRML	●	○	○

Supported file formats (« Import »)

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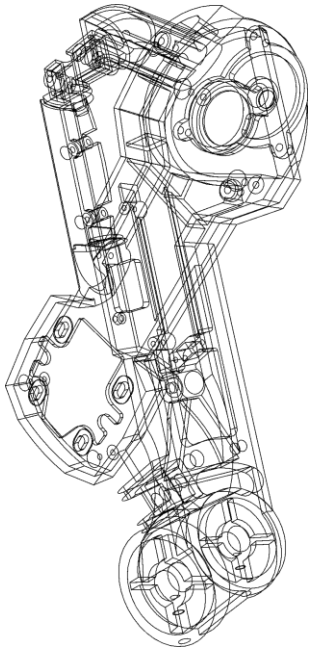
PiXYZ TECHNOLOGY

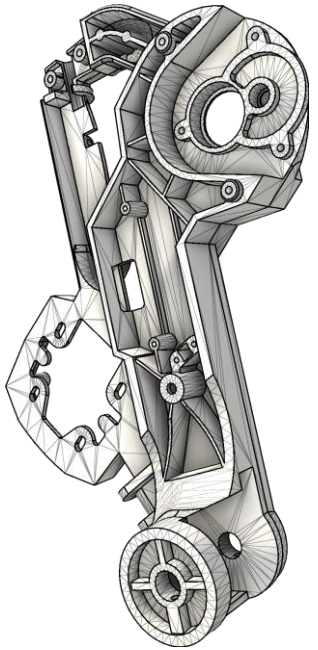
TESSELLATION

PiXYZ is recognized as the best CAD Meshing tool for the industry market by the most challenging customers. PiXYZ creation mesh algorithm offers multiple tolerance settings to ensure the most efficient result for rendering engines.

TESSELATION



Native industrial data



Tessellated (mesh)

Rendered

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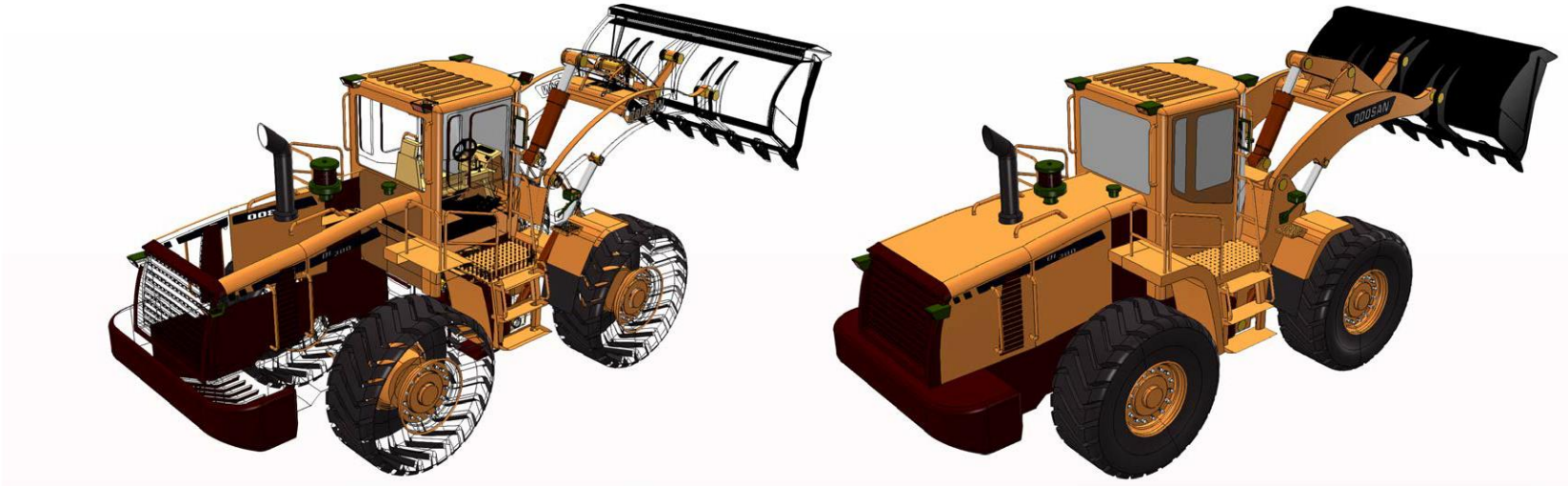
PiXYZ TECHNOLOGY

CAD & MESH AUTOMATIC REPAIRS

PiXYZ offers CAD and Mesh repair features, such as CAD topology correction, removal of duplicated faces/patches, face reconnection, polygon reconnection, normals/ faces orientation unification, etc…

MESH REPARATION



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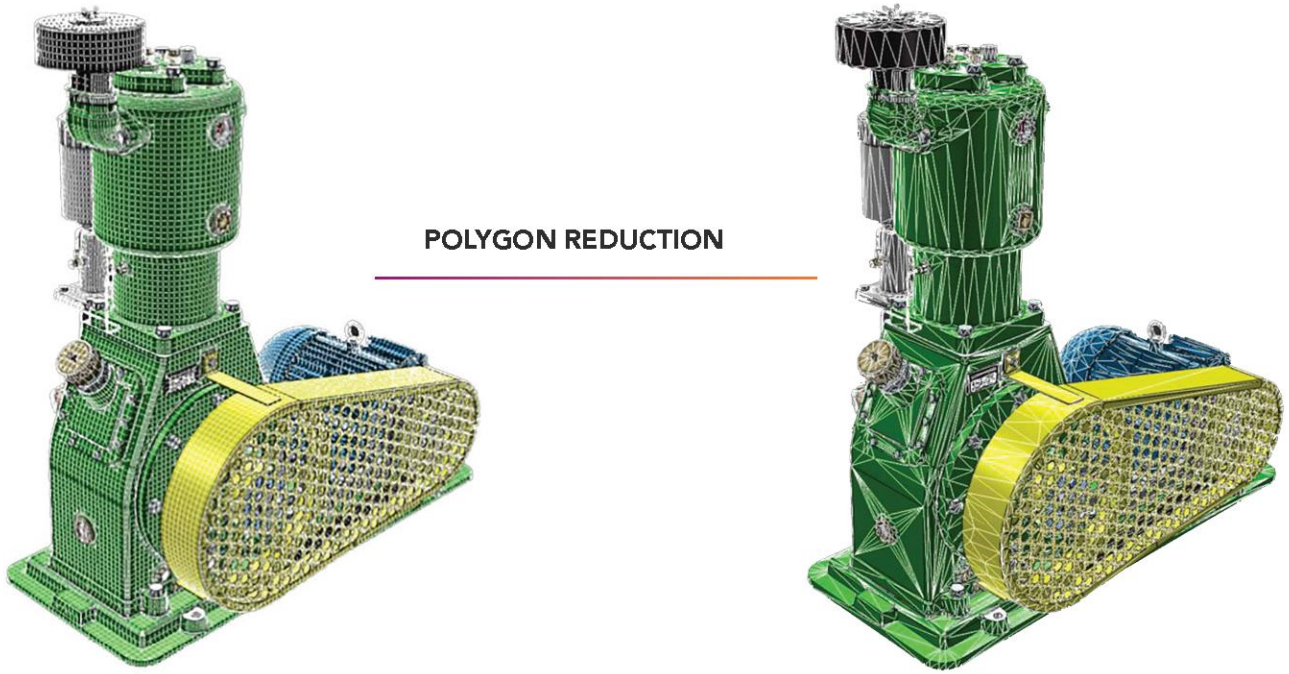
PiXYZ TECHNOLOGY

POLYGON REDUCTION

Reduce and optimize the number of polygons contained in your 3D model without degrading the visual quality of your asset. PiXYZ optimize mesh algorithm offers multiple tolerance settings to ensure the most efficient preparation for rendering engines.



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PiXYZ TECHNOLOGY

LOD GENERATION

Use pixyz to automatically generate «level of details» representations of your cad models.

ORIGINAL
139 173 Triangles
82 Objects
7 Materials

DECIMATION
85 854 Triangles
82 Objects
7 Materials

PROXY + ATLASING + BAKING
8 441 Triangles
1 Object
1 Material

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PiXYZ TECHNOLOGY

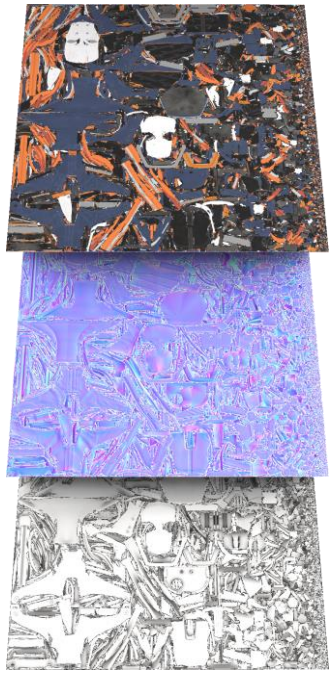
REMESHING

Automatically convert an industrial complex assembly in a single « wetted area ».

Immediately switch from thousands of parts and millions of polygons to a single low-polygon mesh model.

Original asset
40K triangles, 3 materials, 2 meshes

Baked asset
8K triangles, 1 material, 1 meshes



Baked PBR maps

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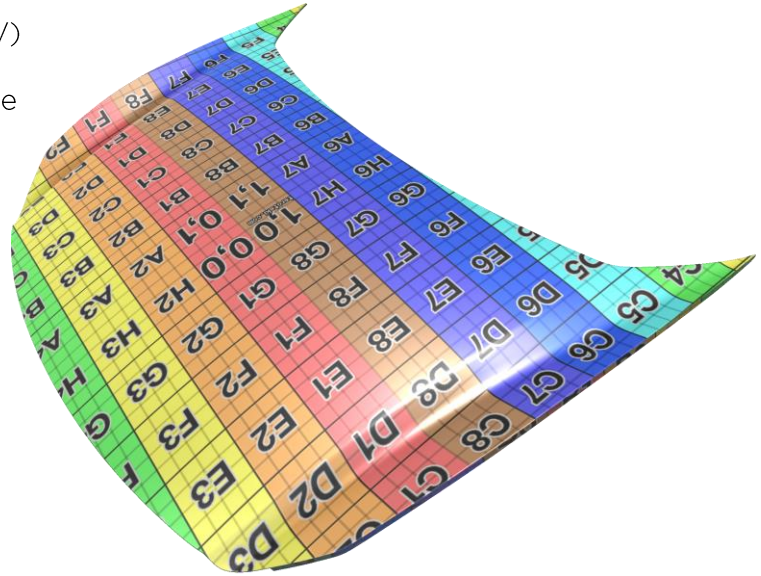
PiXYZ TECHNOLOGY

UV GENERATION TOOLS

PiXYZ offers numerous coordinate textures (UV) generation & prepartation tools to ease the use of textures & advanced materials in Unity engine or other realtime 3D visualization tools



Low stretching, uniform UVs

Textured model

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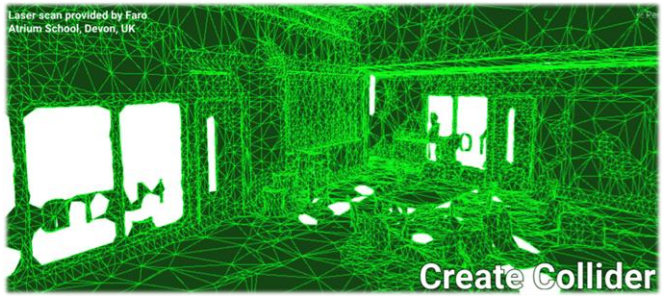
PiXYZ TECHNOLOGY

POINT CLOUD IMPORT, MESHING & LOD CREATION

All PiXYZ product can now import point clouds for visualization use.
Using some of the most advanced PiXYZ core features (retopology, texture baking, voxelization,, ...) those point clouds can even be turned into a standard mesh for realtime visualization, collision detection and much more.

PiXYZ Plugin for Unity also recently introduced an automatic LOD creation for pointclouds within Unity engine.



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PiXYZ TECHNOLOGY

HIDDEN ELEMENTS
AUTOMATIC SORT & REMOVAL

Automatically remove or select inner entities from complex assemblies & geometries.

Complete assembly with inner elements

Automatically cleaned-up asset

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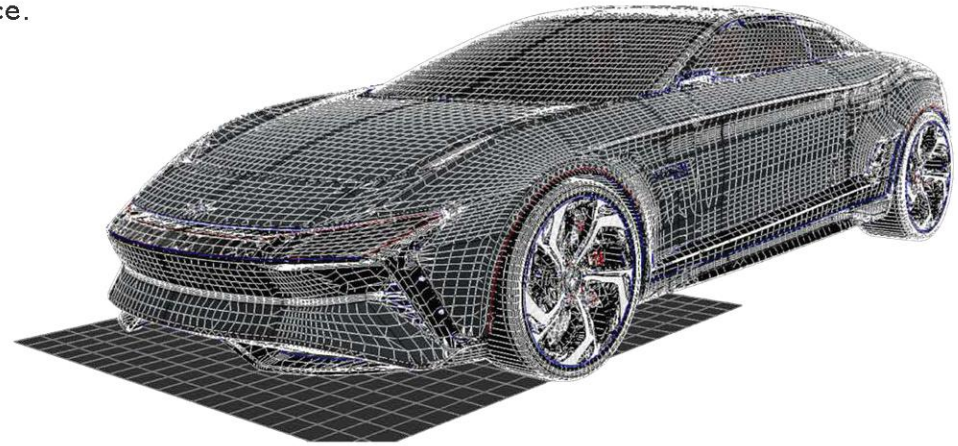
PiXYZ TECHNOLOGY

EXPORT FOR AR

Take advantage of PiXYZ algorithms to simplify complex 3D assets and export directly to the usdz format for instant AR visualization on any Apple device.



USD FILE FORMAT

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PRODUCTS

PiXYZ PRODUCTS

GET YOUR CAD DATA READY FOR NEW EXPERIENCES

Studio

Interactively prepare & optimize any CAD data for all your needs.

All the knowledge of PiXYZ in a toolbox for 3D assets interactive preparation & a glimpse at scripting & automation.

Batch

Build a direct, automatic & bespoke pipeline from CAD to real-time end-visualization solutions using PiXYZ Batch & its scripting capability.

With on-demand service & support, PiXYZ can help build tailor-made data preparation strategies to best suit your needs.

Plugin

PiXYZ for Unity 3D : connect engineering & BIM data to game engines for new realtime & immersive expériences.

Give life to CAD data with effortless integration in Unity.

Review

The ultimate CAD file viewer: instantly review & interact with complex and various assemblies in desktop, AR, VR.

Review 3D models and collaborate within the company to facilitate decision-making & speed-up design workflows.

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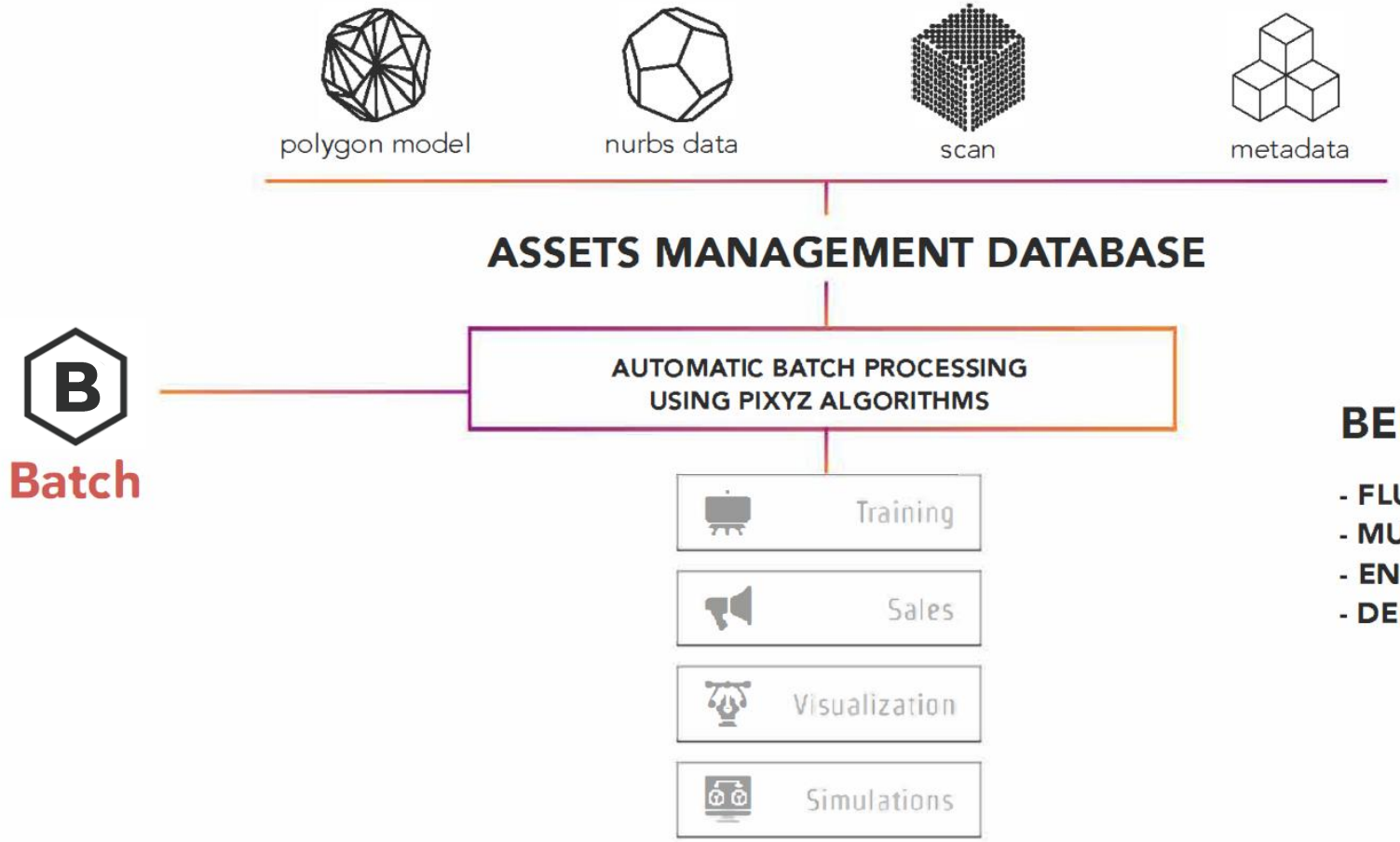
BUSINESS CASES

BEST-IN CLASS PRACTICES FOR CAD MANAGEMENT USING PiXYZ

BUSINESS CASES

DIGITAL MOCKUP DEMOCRATIZATION

AIRBUS DEFENCE & SPACE Google ALSTOM



BENEFITS :

- FLUIDIFY AND ENRICH CAD PROCESS
- MULTIPLY SCENARIOS
- ENRICH USAGES
- DEMOCRATIZE 3D USAGE

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BUSINESS CASES

UNIVERSAL COLLABORATIVE CAD VIEWER

BENEFITS :

- DELAY HARDWARE RENEWAL
- REDUCE LICENSE COST
- SIMPLIFY SUPPLIER/ENTITIES COLLABORATION
- REDUCE TRAVEL COST
- DEMOCRATIZE VR

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BUSINESS CASES

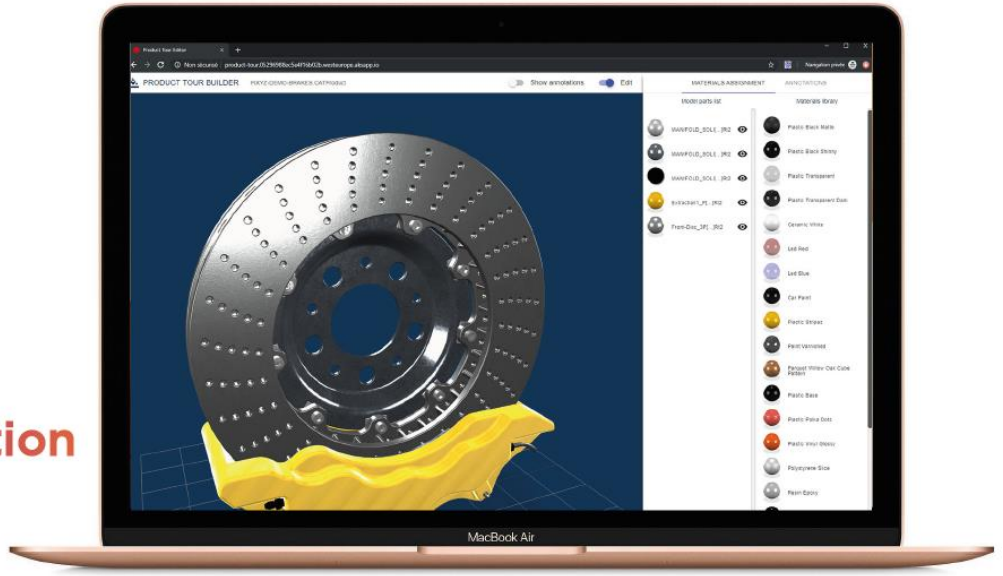
DATA OPTIMIZATION AND CONVERTION SAAS PLATEFORM

PiXYZ APIs can now be set up as a web service to prepare and optimize CAD content on-demande. PiXYZ SaaS offer has been deployed in several major industrial companies cloud servers and is connected to the entire group network : shared folders, filelake, openstack, ...).

BENEFITS :

- ACCESSIBLE VIA INTRANET
- MANAGE OPTIMIZATION SCENARIO
- USERS MANAGEMENT
- EMBEDED 3D VIEWER
- EASY TO USE

API integration



UPLOAD CAD OR BIG 3D FILE

CHOOSE OPTIMIZATION SCENARIO

DOWNLOAD OPTIMIZED ASSET OR APPLICATION

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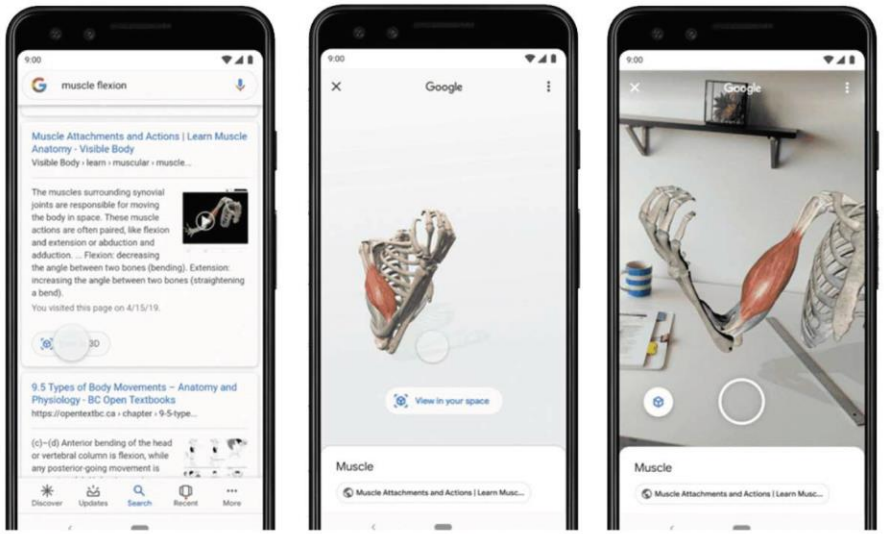
BUSINESS CASES

MASSIVE 3D PREPARATION PIPELINE

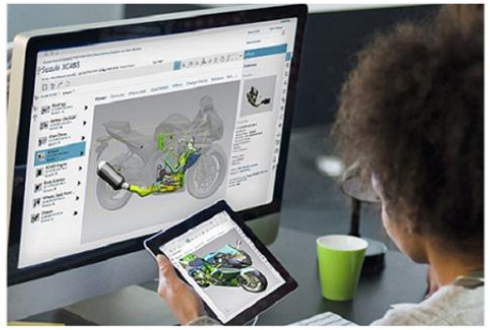
"Google is adding 3D augmented reality models to its search results — so you can check out a pair of shoes in the "real world" while you're shopping online or put an animated shark in your living room."



BUSINESS CASES
PDM CONNECTORS

MAGIC TRIANGLE

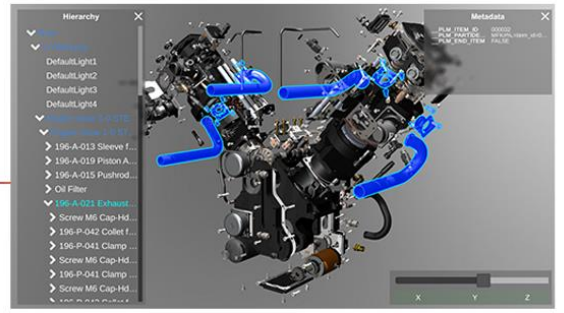
ATOS, Unity & PiXYZ have joined forces to create a new & powerfull TeamCenter connector to Unity engine. This process will allow TC users to easily access, convert, optimize et pushed their CAD assets directly from their PDM to Unity expériences.



SIEMENS Teamcenter client(s) using ATOS bespoke PiXYZ connector for Unity

PiXYZ Dataprep Processing

Real-time 3D-ready assets



Instant real-time 3D experience for any platform

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THANK YOU !

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Technical question : support@pi.xyz

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Youtube channel https://www.youtube.com/channel/UCrtNbZIZIfeZVCvVeTkFFNw

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