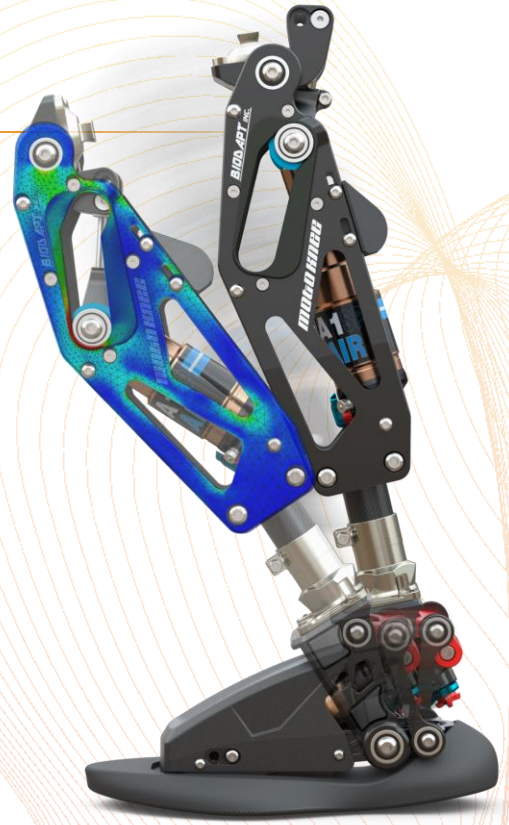
Достъпни инженерни симулации

За конкретната задача в точния момент



Пенко Ангелов

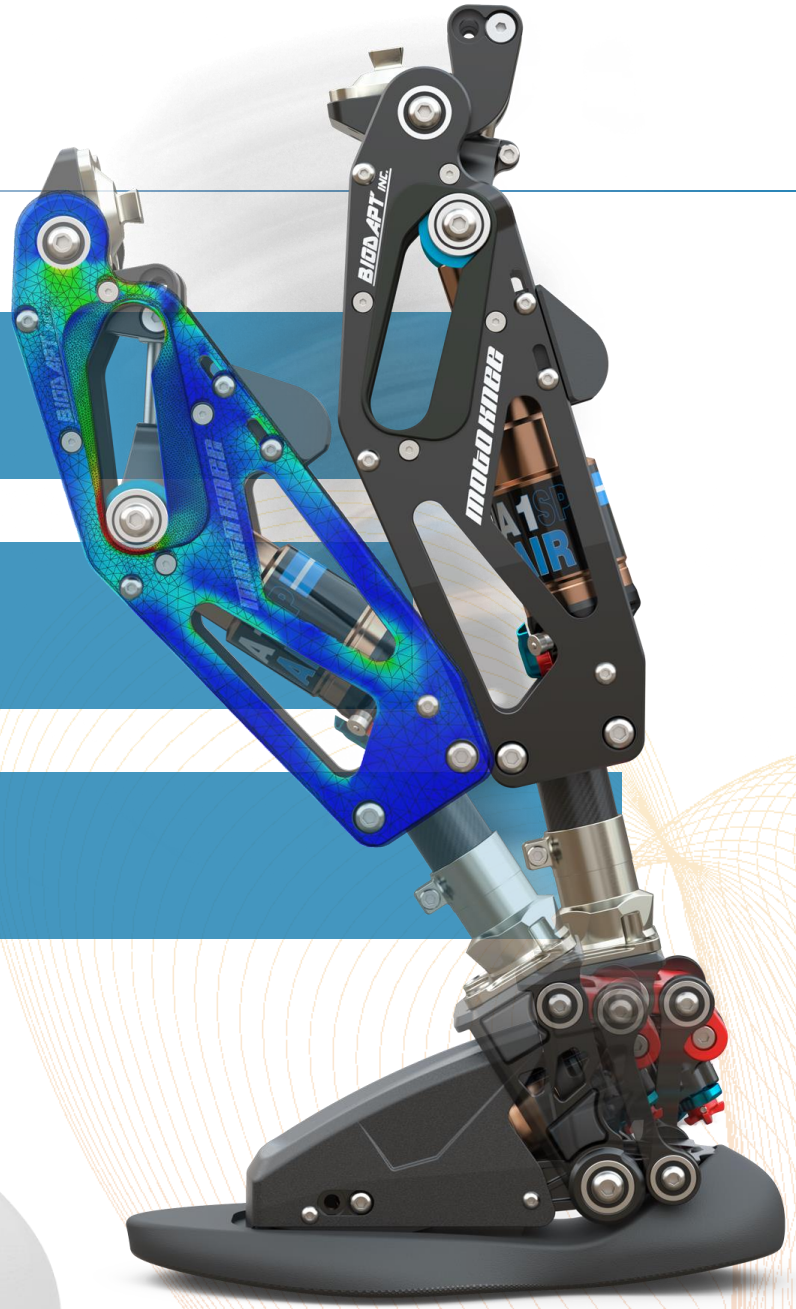
Експерт – техническа поддръжка

XXI среща на приятелите на ДиТра

Structural Designer

Structural Engineer

Портфолио

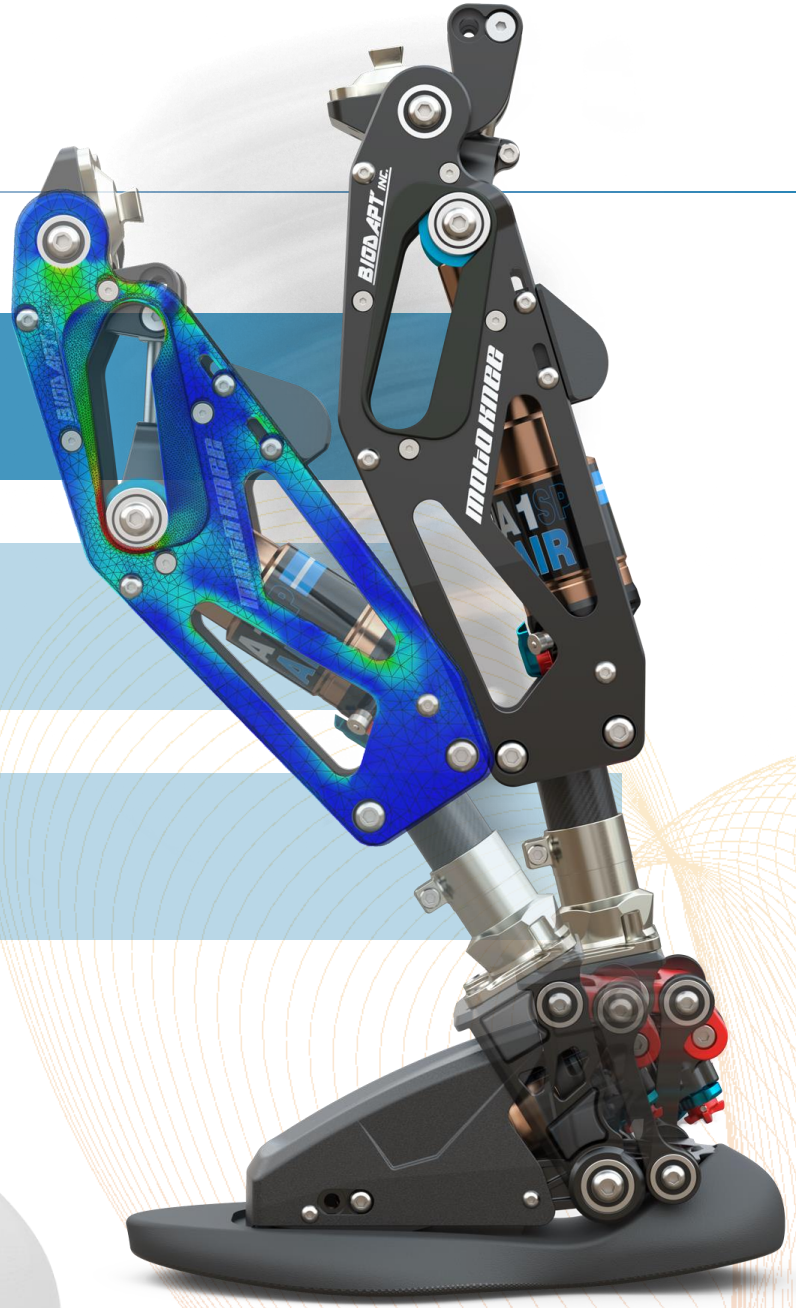


DiTra

Structural Designer

Structural Engineer

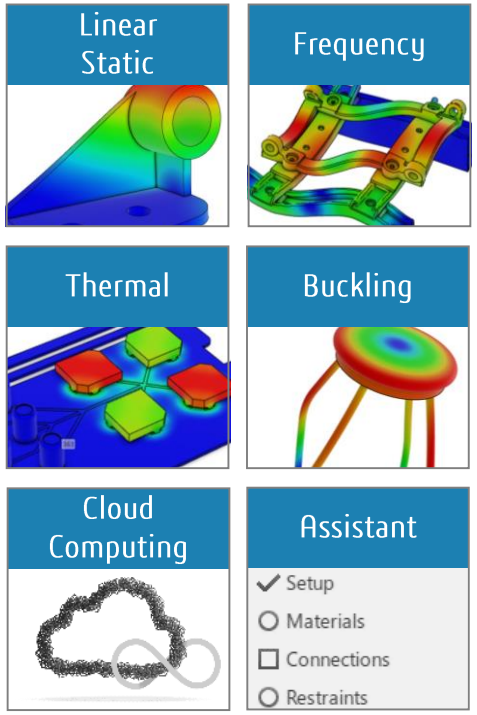
Портфолио

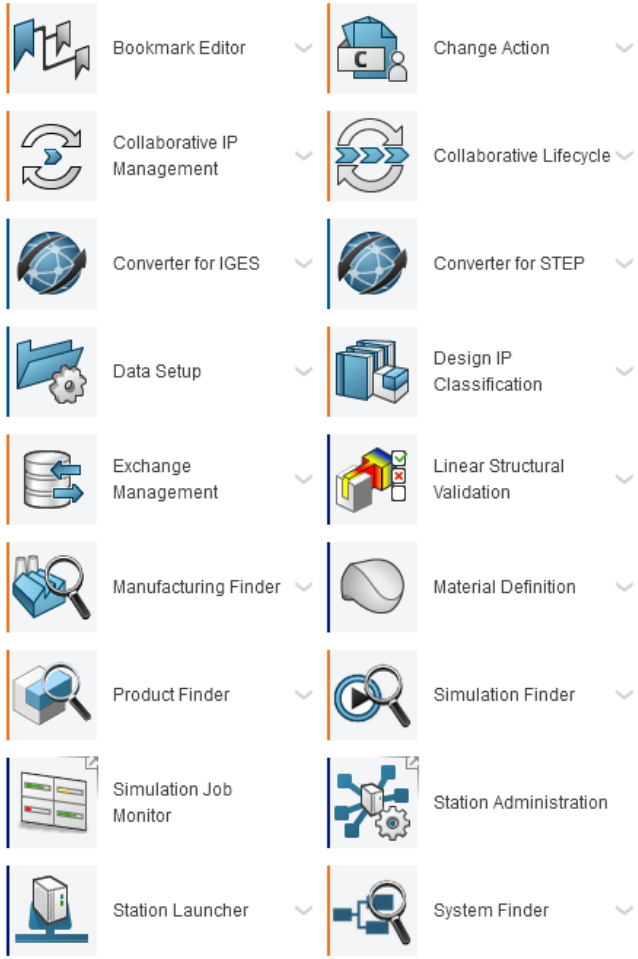


XXI среща на приятелите на ДиТра

Structural Designer

Structural Designer (SRD)



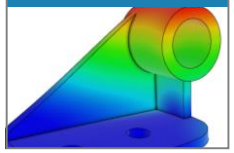


- Пълна асоциативност със SOLIDWORKS
- Поддръжка на други CAD формати
- Автоматично омрежване (+ ръчен контрол на мрежата)
- Възможност за локално или облачно изчисление
- Асистент за олекотен работен процес

Structural Designer

Structural Designer (SRD)

Linear Static



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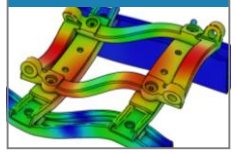
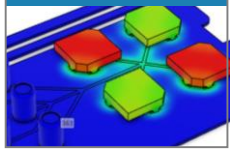
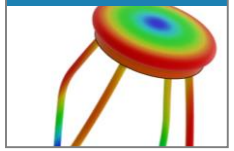


Thermal



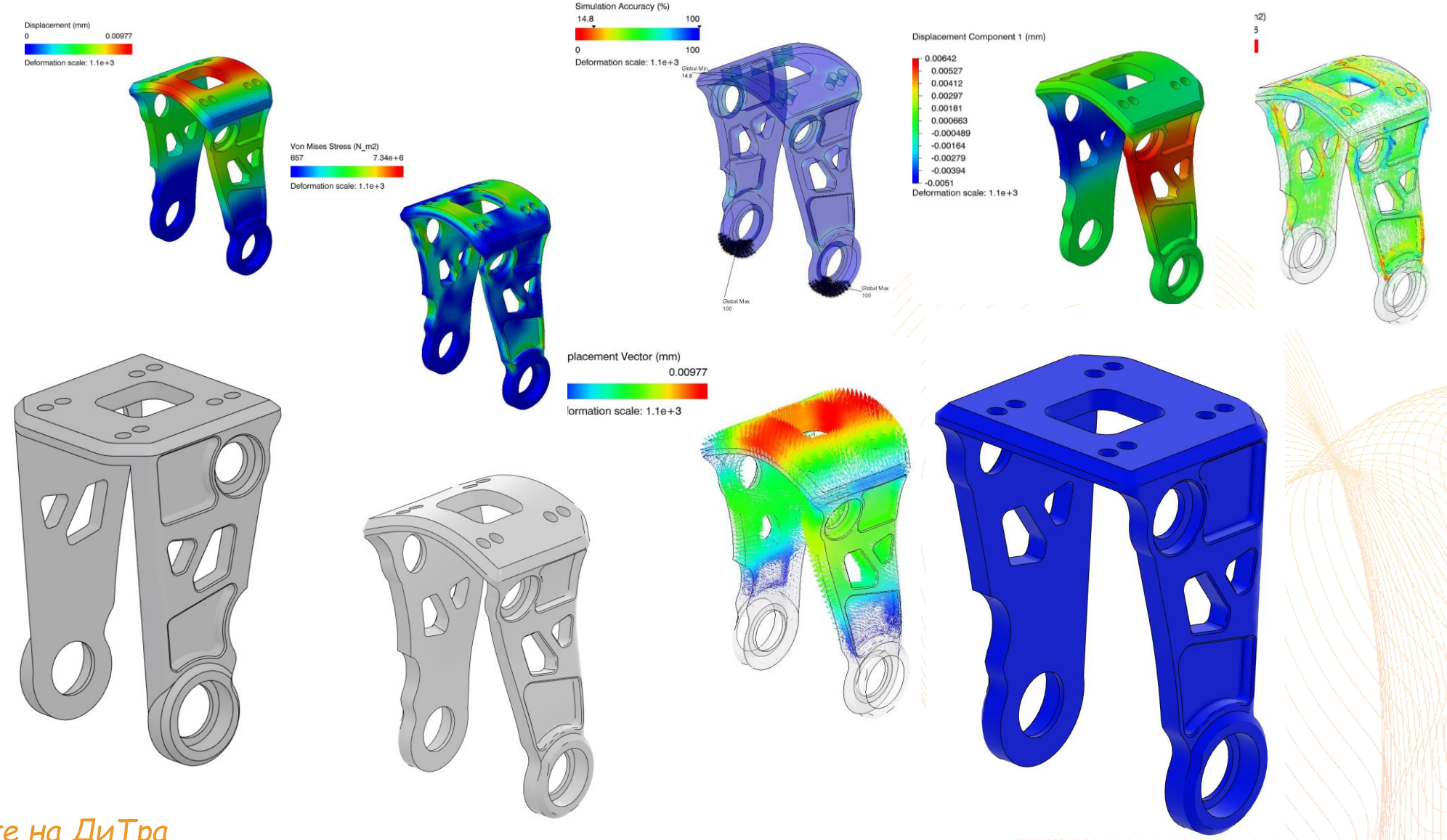
Buckling



Cloud Computing

Assistant

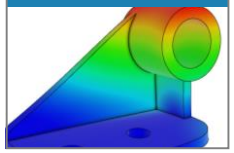
- ✔ Setup
- ○ Materials
- ☐ Connections
- ○ Restraints



Structural Designer

Structural Designer (SRD)

Linear Static



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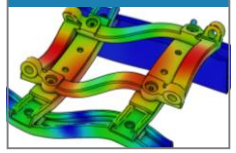

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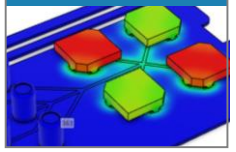

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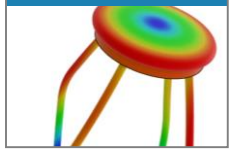

Cloud Computing

Assistant

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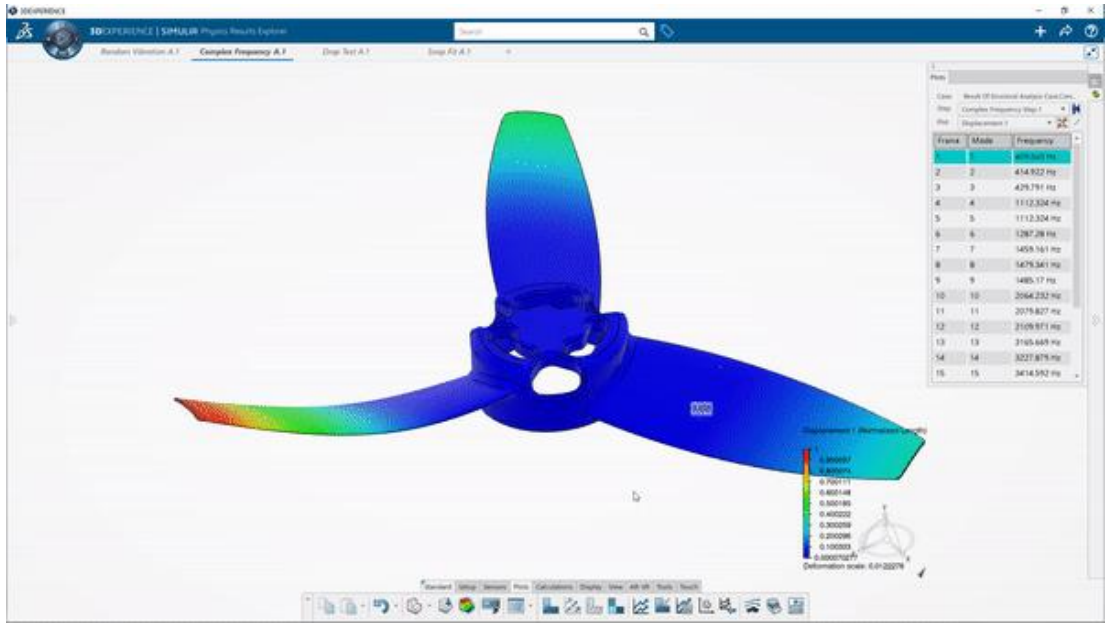
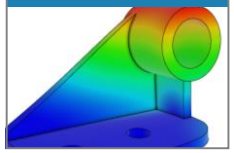
- ○ Materials
- ☐ Connections
- ○ Restraints



Structural Designer

Structural Designer (SRD)

Linear Static



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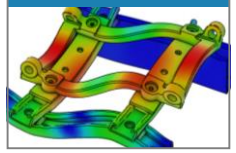

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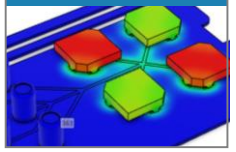

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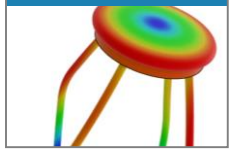

Cloud Computing

Assistant

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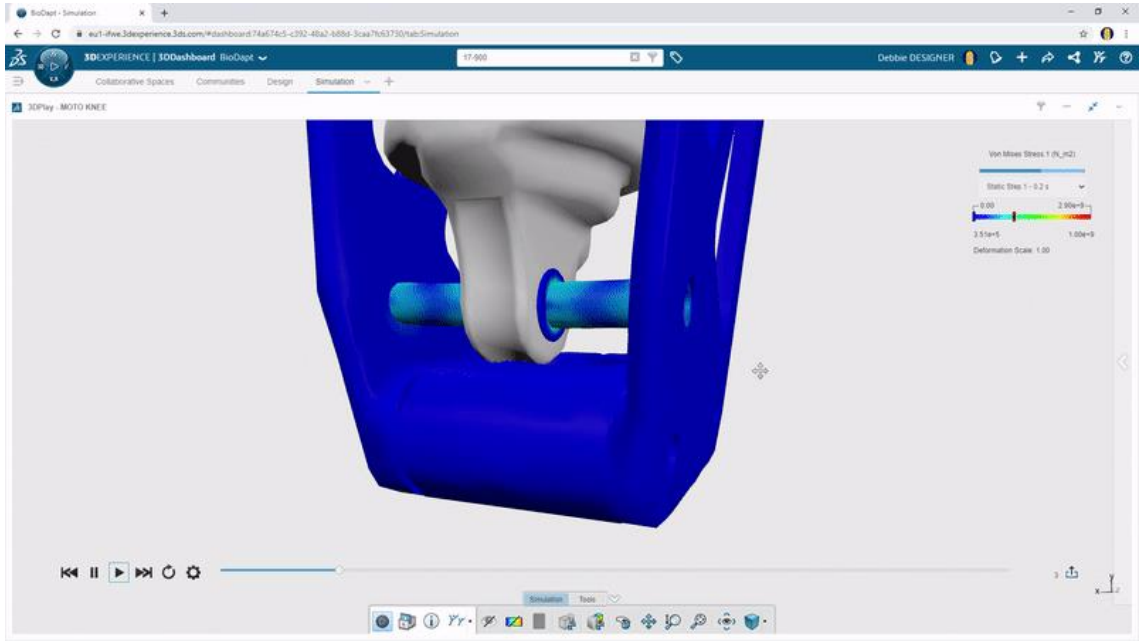
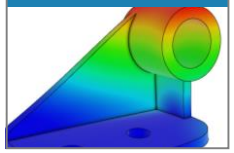
- ○ Materials
- ☐ Connections
- ○ Restraints



Structural Designer

Structural Designer (SRD)

Linear Static



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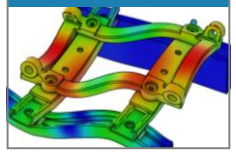

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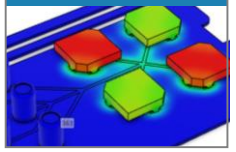

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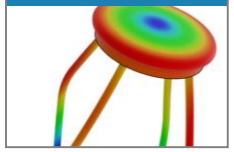

Cloud Computing

Assistant

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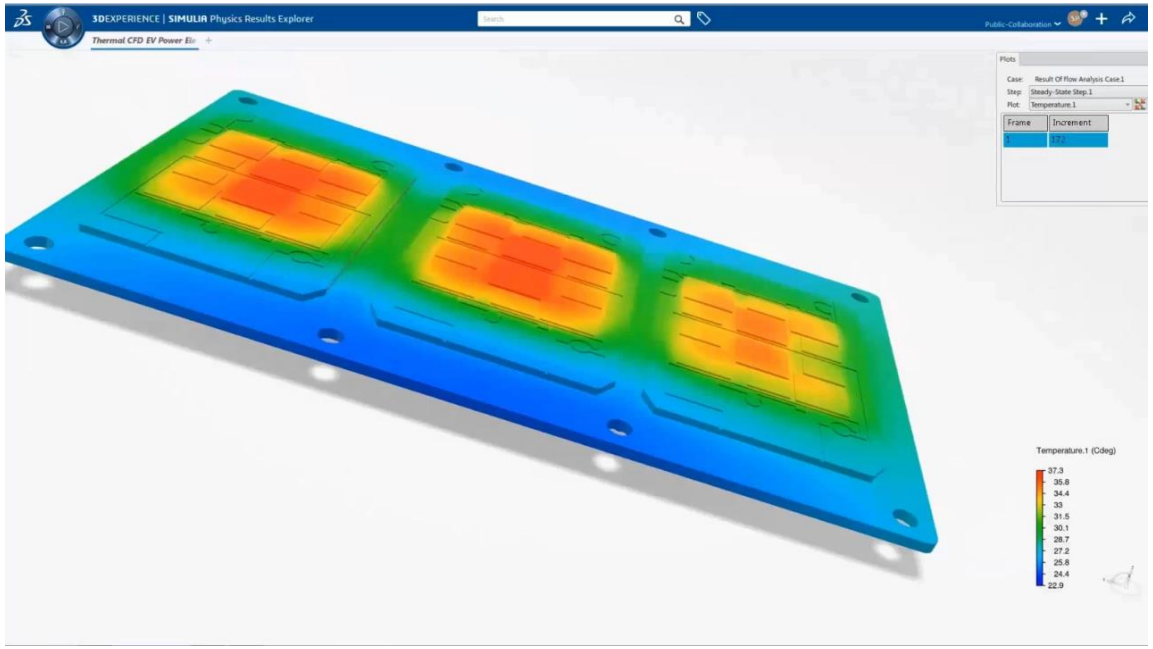
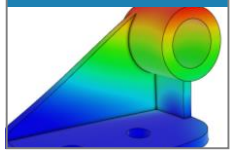
- ☐ Connections
- ○ Restraints



Structural Designer

Structural Designer (SRD)

Linear Static



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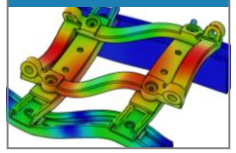

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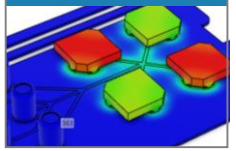

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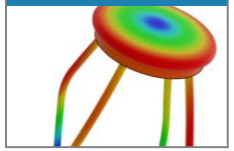
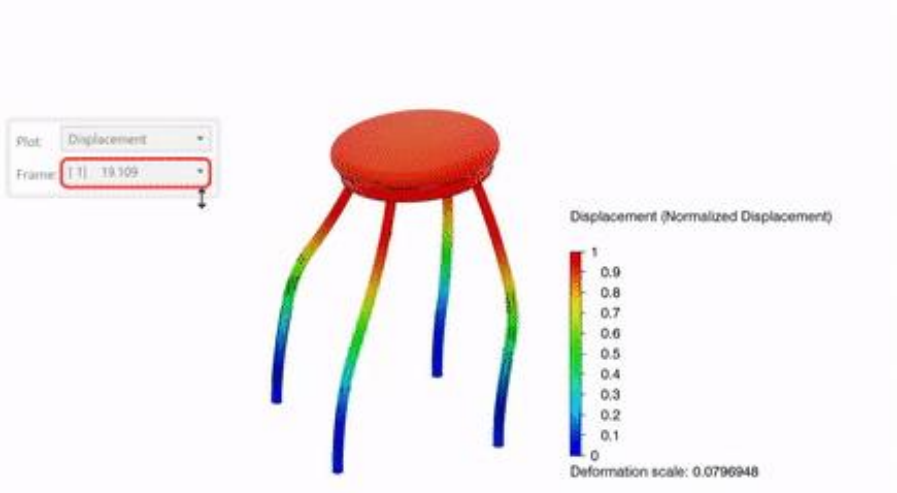


Cloud Computing

Assistant

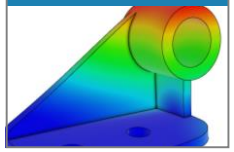
- ✓ Setup
- ○ Materials
- ☐ Connections
- ○ Restraints



Structural Designer

Structural Designer (SRD)

Linear Static



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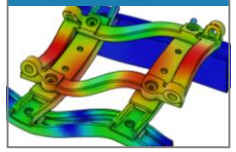

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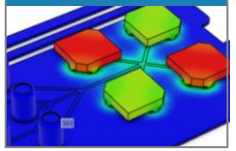

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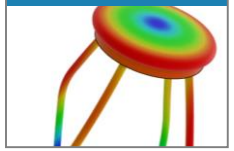
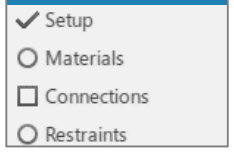
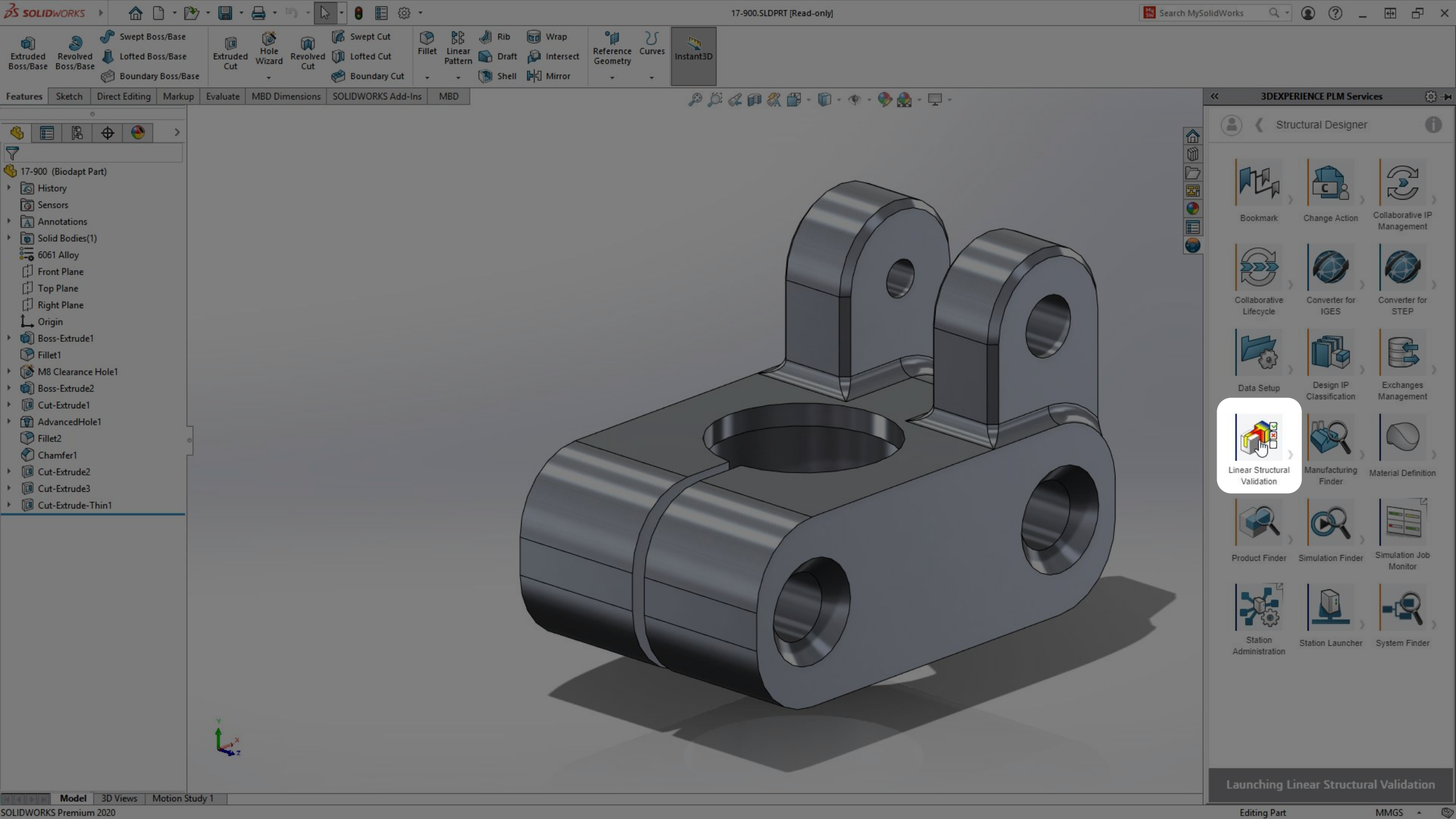


Cloud Computing

Assistant




SOLIDWORKS
17-900.SLDPRT [Read-only]
Search MySolidWorks
Extruded Boss/Base
Revolved Boss/Base
Swept Boss/Base
Lofted Boss/Base
Boundary Boss/Base
Extruded Cut
Hole Wizard
Revolved Cut
Swept Cut
Lofted Cut
Boundary Cut
Fillet
Linear Pattern
Rib
Draft
Shell
Wrap
Intersect
Mirror
Reference Geometry
Curves
Instant3D
Features
Sketch
Direct Editing
Markup
Evaluate
MBD Dimensions
SOLIDWORKS Add-Ins
MBD
17-900 (Biodapt Part)
History
Sensors
Annotations
Solid Bodies(1)
6061 Alloy
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
Fillet1
M8 Clearance Hole1
Boss-Extrude2
Cut-Extrude1
AdvancedHole1
Fillet2
Chamfer1
Cut-Extrude2
Cut-Extrude3
Cut-Extrude-Thin1
3DEXPERIENCE PLM Services
Structural Designer
Bookmark
Change Action
Collaborative IP Management
Collaborative Lifecycle
Converter for IGES
Converter for STEP
Data Setup
Design IP Classification
Exchanges Management
Linear Structural Validation
Manufacturing Finder
Material Definition
Product Finder
Simulation Finder
Simulation Job Monitor
Station Administration
Station Launcher
System Finder
Launching Linear Structural Validation
Model
3D Views
Motion Study 1
SOLIDWORKS Premium 2020
Editing Part
MMGS

3DEXPERIENCE

3DEXPERIENCE | SIMULIA Linear Structural Validation

Search

Debbie DESIGNER
BioDapt

17-900 Test

Assistant

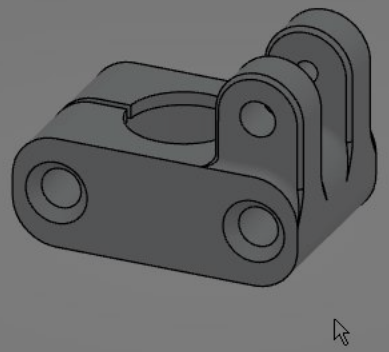
Setup
Materials
Connections
Restraints
Loads
Simulate
Results

Insertion Successful
Finite Element Model00000090
Type: Finite Element Model

Commands

The Assistant provides steps that enable you to define every required component of the simulation.

Click one of the steps above to get started.



Y
X
Z

Standard | Setup | Mesh | Connections | Restraints | Loads | Results | Display | View | AR-VR | Tools | Touch

3DEXPERIENCE

3DEXPERIENCE | SIMULIA Linear Structural Validation

Search

Debbie DESIGNER
BioDapt

17-900 Test

Assistant

Setup
Materials
Connections
Restraints
Loads
Simulate
Results

Insertion Successful
Finite Element Model00000090
Type: Finite Element Model

Commands

The Assistant provides steps that enable you to define every required component of the simulation.

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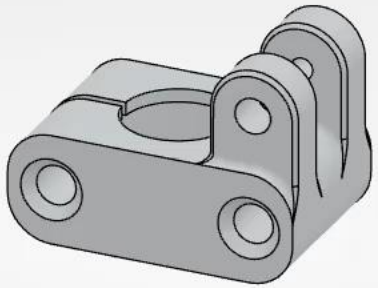


Y
X
Z

Standard | Setup | Mesh | Connections | Restraints | Loads | Results | Display | View | AR-VR | Tools | Touch

SOLIDWORKS Premium 2020

Editing Part

MMGS

BioDapt - Simulation

eu1-ifwe.3dexperience.3ds.com/#dashboard:74a674c5-c392-48a2-b88d-3caa7fc63730/tab:Simulation/app:ENOLCMI_AP/content:X3DContentId=%7B"protocol"%3A"3DXContent"%2C"version"%3A"1.0"%2C"source"%3A"X3DCSMA_AP"%2C"data"%3A%7B"items"%3A%...

3DEXPERIENCE | 3DDashboard BioDapt

Search In Current Dashboard

Adam ANALYST

Collaborative Industry Innovator

3D Markup | 3DPlay | 3DSpace | Bookmark Editor | Change Action

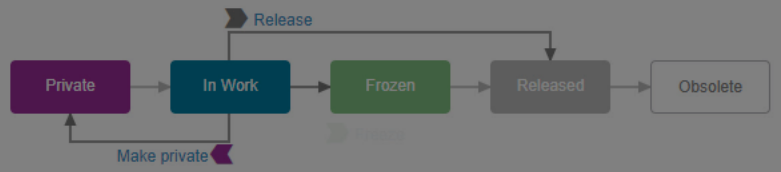
Classify & Reuse | Collaboration & Approvals | Collaboration for Microsoft | Collaborative Lifecycle | Collaborative Tasks

Compare | IP Classify & Reuse | Issue 3D Review | Issue Management | Product Explorer

Project Execution | Project Gantt | Route Management

Collaborative Spaces | Communities | Design | Simulation

ENOVIA - Collaborative Lifecycle - R1132101102931 - MOTO KNEE A.1



Graph	Title	Revision	Maturity State	Creation Date	Modification Date	Description
	MOTO KNEE	A.1	In Work	9/7/2020, 2:00:00 AM	9/7/2020, 2:59:24 AM	

Lifecycle | Collaboration

Your selection has been updated

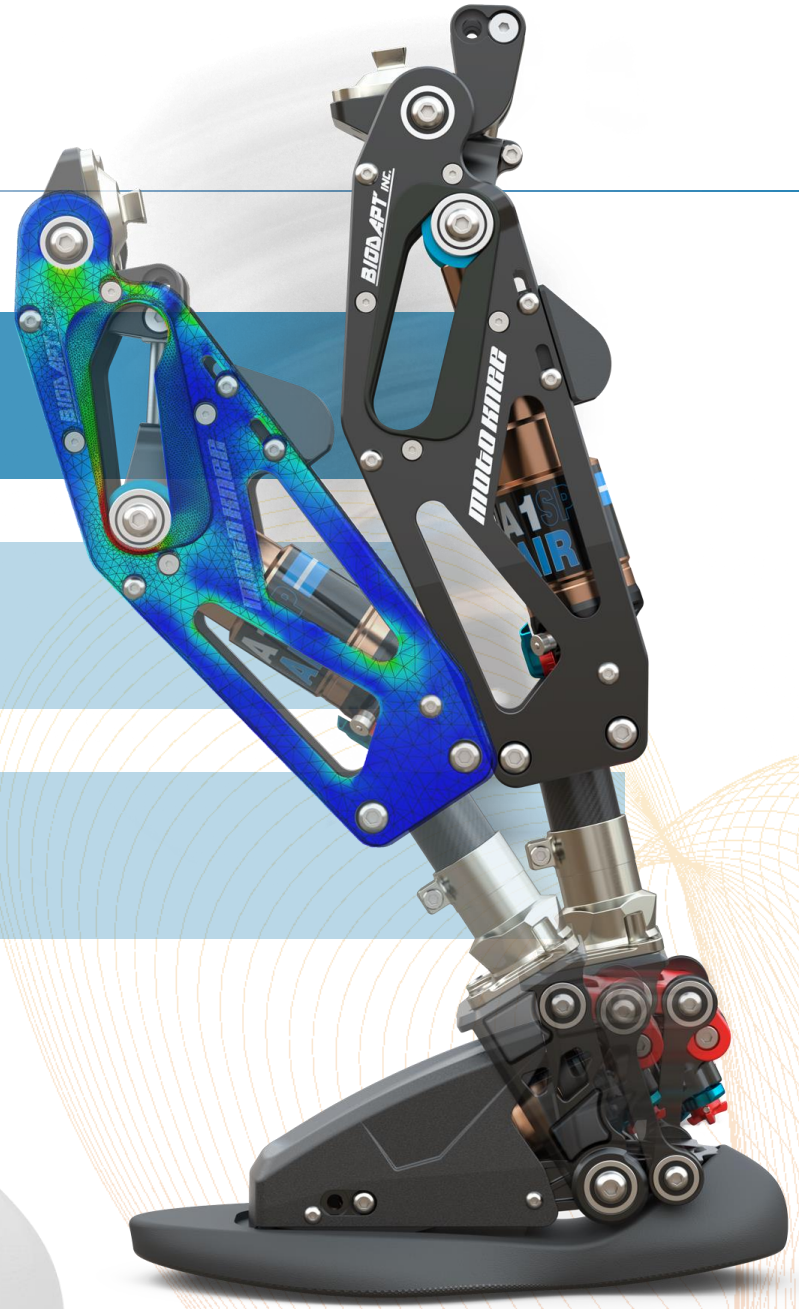
Waiting for r1132101102931-us1-space.3dexperience.3ds.com...

DiTra

Structural Designer

Structural Engineer

Портфолио



XXI среща на приятелите на ДиТра

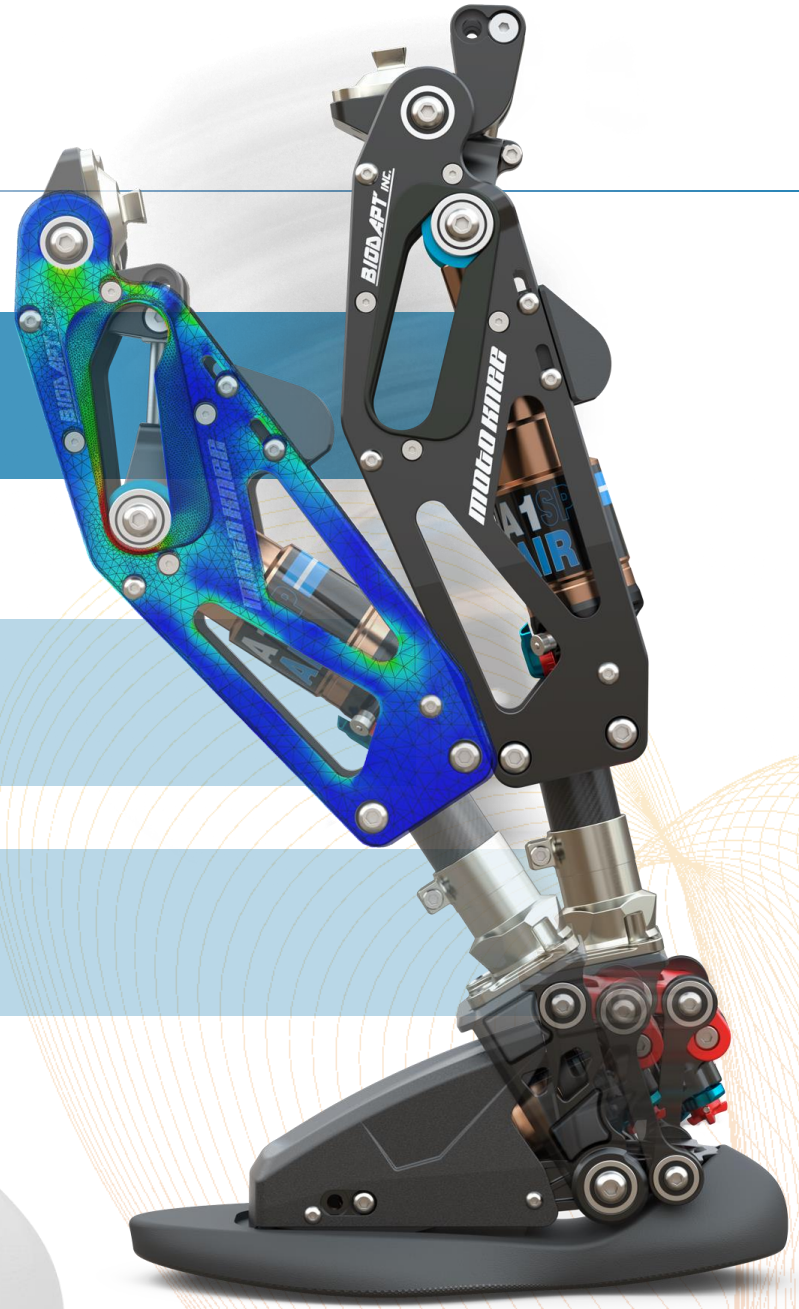
DiTra

Structural Designer

Достъпни инженерни симулации

Structural Engineer

Портфолио

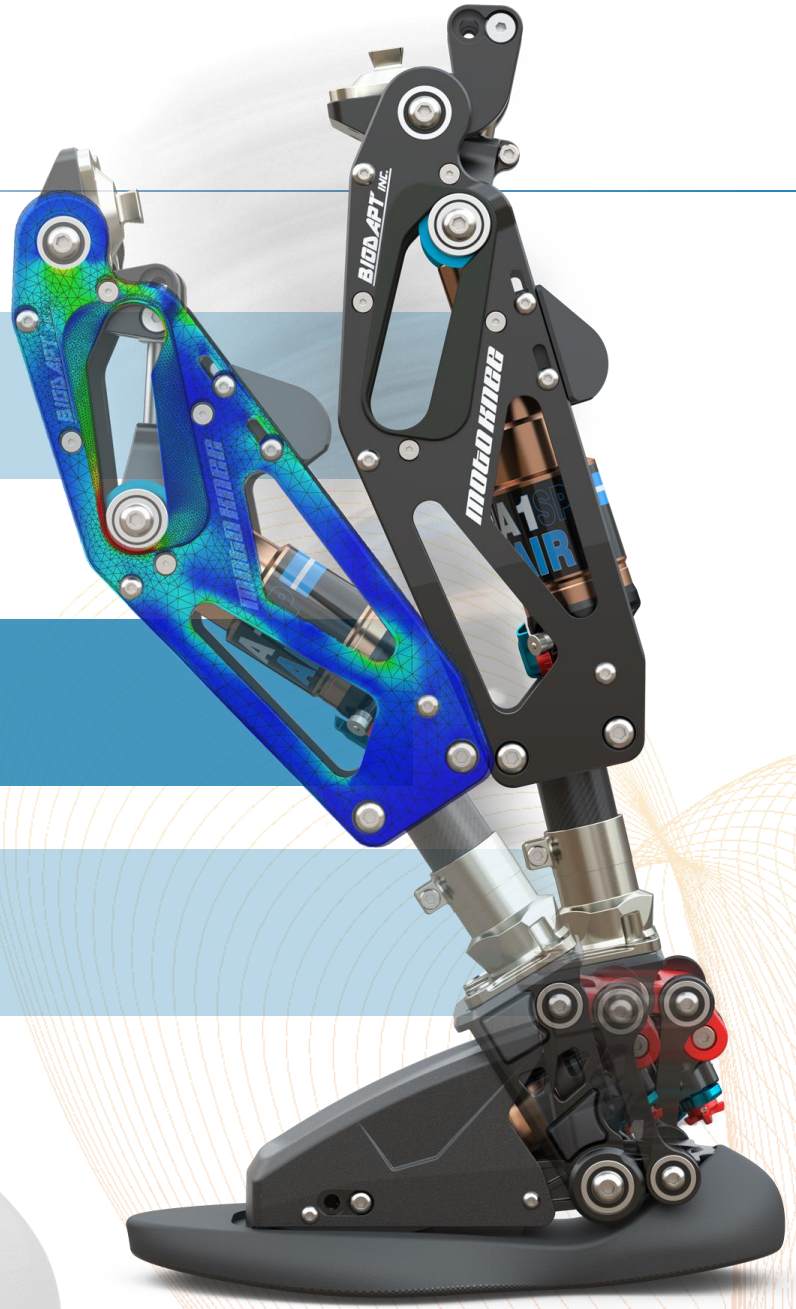


Structural Designer

Достъпни инженерни симулации

Structural Engineer

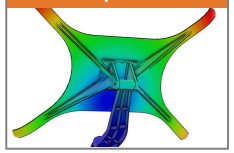
Портфолио



Structural Engineer

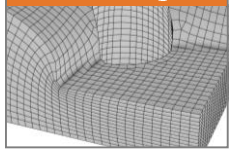
Structural Engineer (SLL)

Harmonic Response

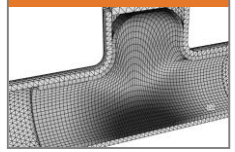


Modal Dynamic

Advanced Meshing

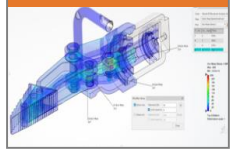


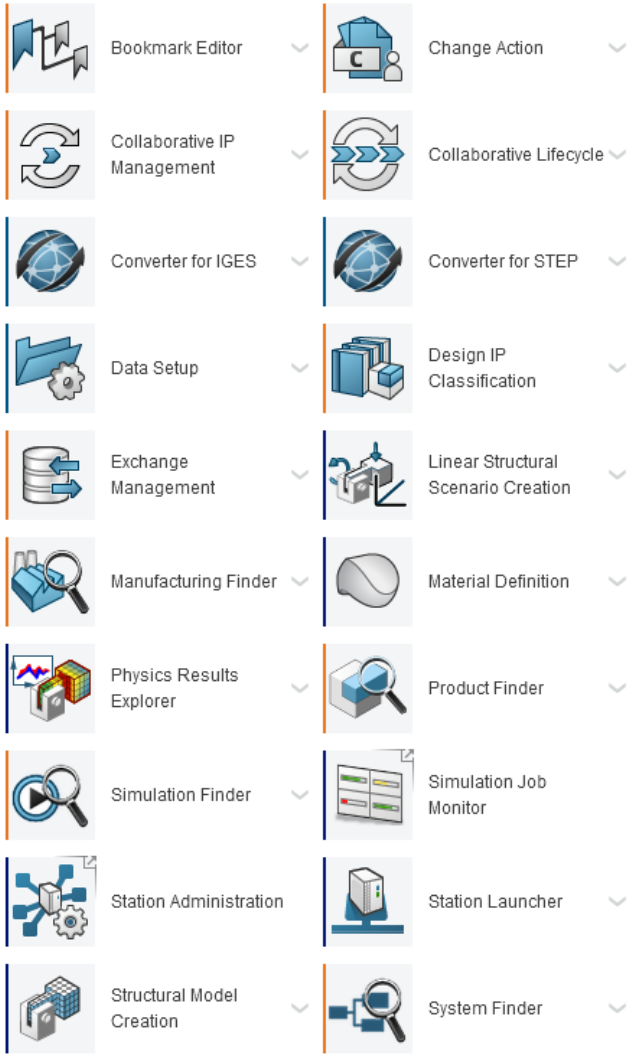
Advanced Elements



Multi-Step

Advanced Postprocessing



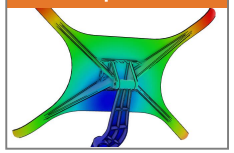


- Допълнителни възможности за анализ на изделията.
- Реалистично поведение при всички стандартни условия на конструктивно натоварване и гранични условия.
- Автоматично откриване на контактни повърхнини.
- Висококачествено омрежване директно върху геометрията на модела с възможност за допълнителен контрол на база правила.
- Използва доказана технология от Abaqus с точни структурни и термични симулации в интуитивен работен процес.
- Лесно и интуитивно сравнение и анализ на резултатите.
- Възможност за надграждане.

Structural Engineer

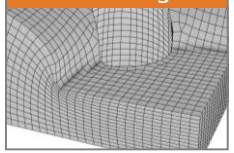
Structural Engineer (SLL)

Harmonic Response

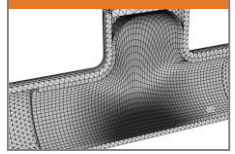


Modal Dynamic

Advanced Meshing

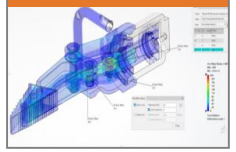


Advanced Elements



Multi-Step

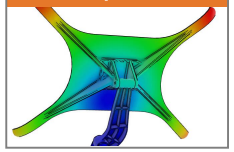
Advanced Postprocessing



Structural Engineer

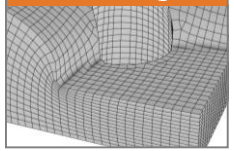
Structural Engineer (SLL)

Harmonic Response

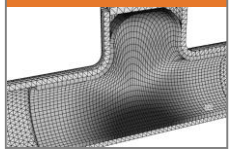


Modal Dynamic

Advanced Meshing

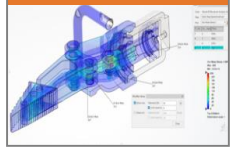


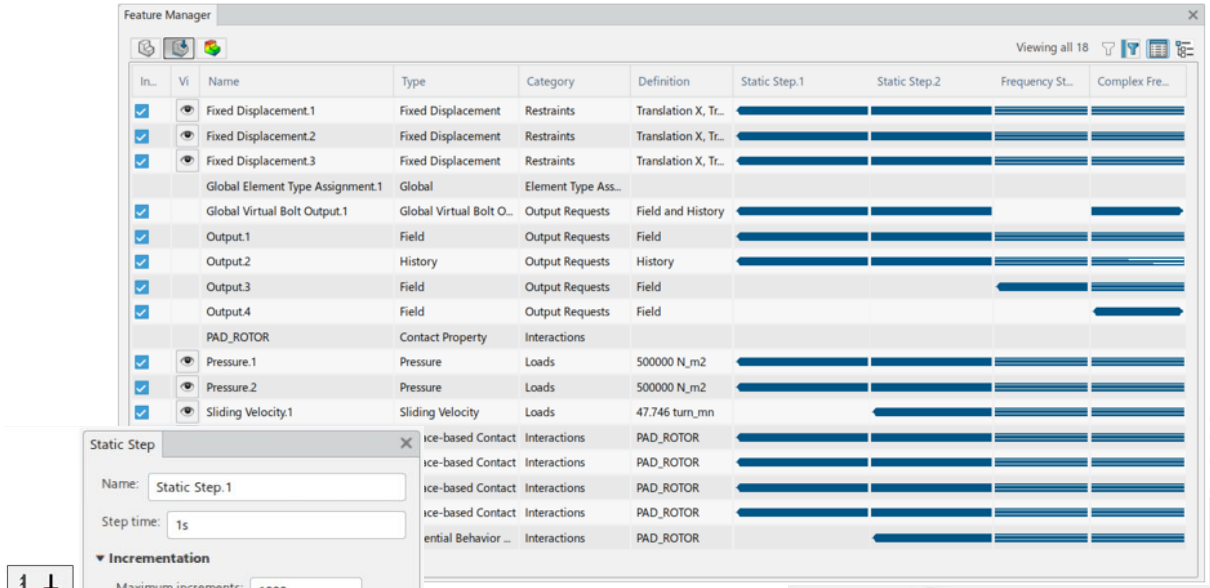
Advanced Elements

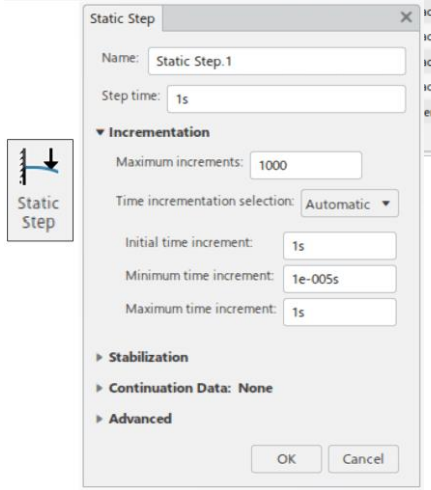


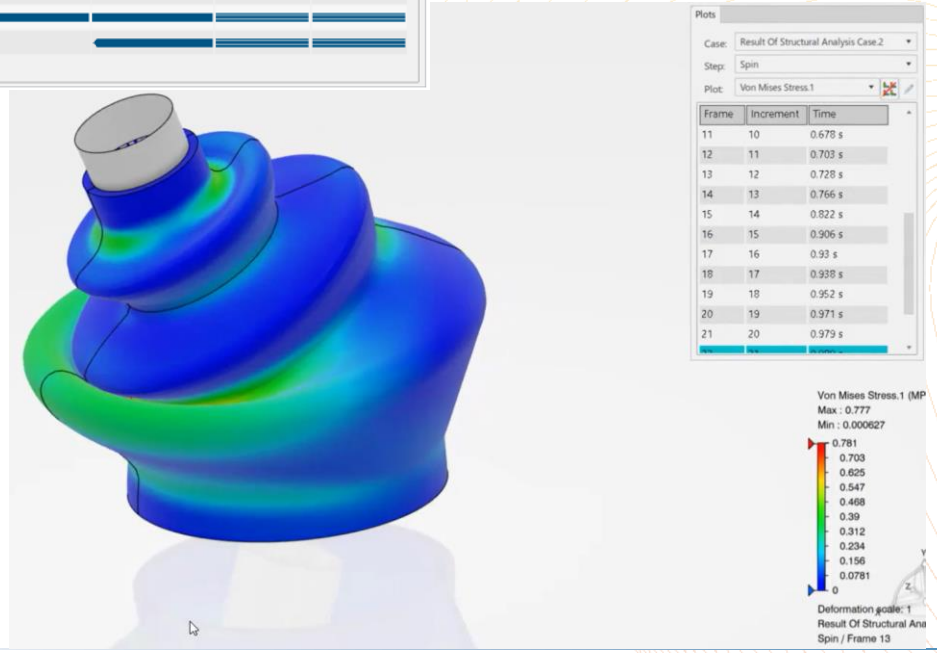
Multi-Step

Advanced Postprocessing





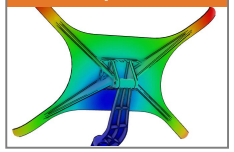




Structural Engineer

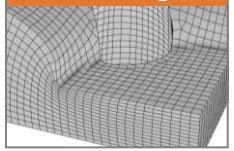
Structural Engineer (SLL)

Harmonic Response

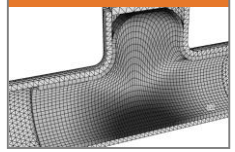


Modal Dynamic

Advanced Meshing

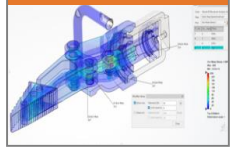


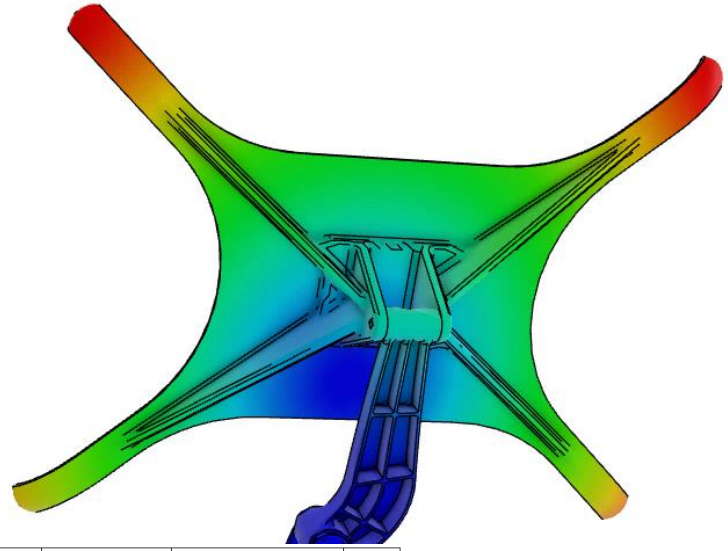
Advanced Elements

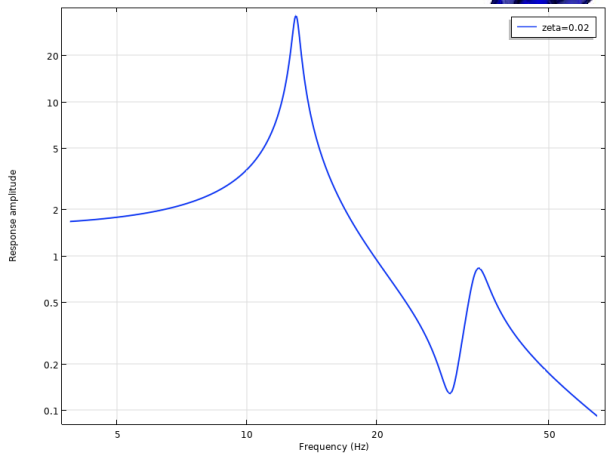


Multi-Step

Advanced Postprocessing



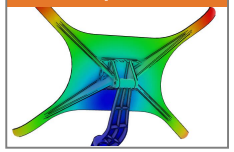




Structural Engineer

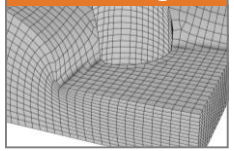
Structural Engineer (SLL)

Harmonic Response

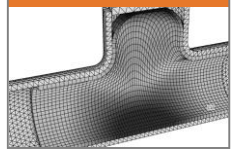


Modal Dynamic

Advanced Meshing

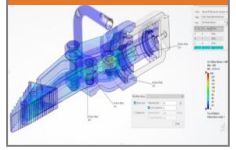


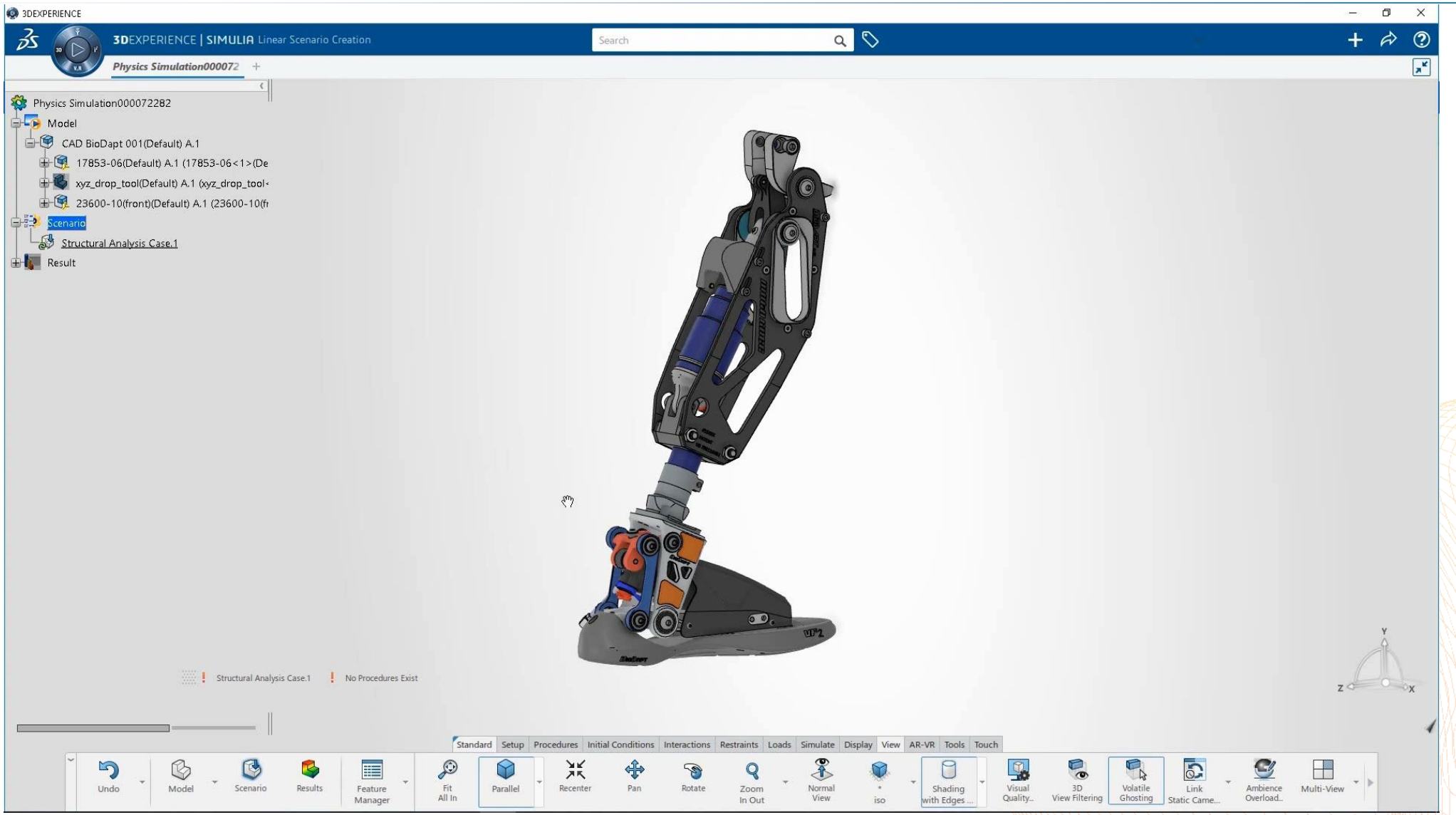
Advanced Elements

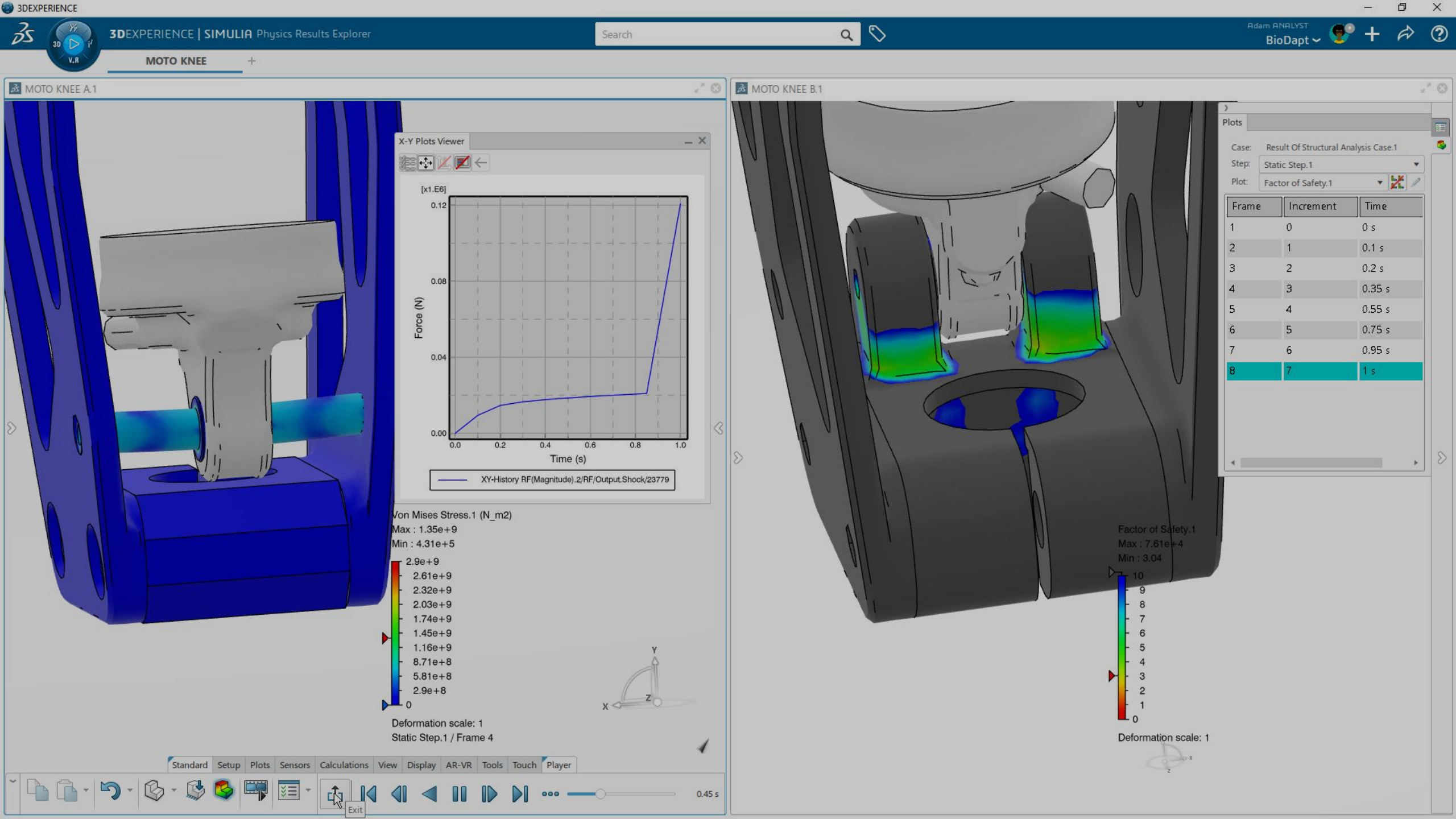


Multi-Step

Advanced Postprocessing






3DEXPERIENCE
3DEXPERIENCE | SIMULIA Physics Results Explorer
Search
Adam ANALYST
BioDapt
MOTO KNEE
MOTO KNEE A.1
X-Y Plots Viewer
[x1.E6]
Force (N)
Time (s)
XY-History RF(Magnitude).2/RF/Output.Shock/23779
Von Mises Stress.1 (N_m2)
Max : 1.35e+9
Min : 4.31e+5
2.9e+9
2.61e+9
2.32e+9
2.03e+9
1.74e+9
1.45e+9
1.16e+9
8.71e+8
5.81e+8
2.9e+8
0
Deformation scale: 1
Static Step.1 / Frame 4
Standard
Setup
Plots
Sensors
Calculations
View
Display
AR-VR
Tools
Touch
Player
Exit
0.45 s
MOTO KNEE B.1
Plots
Case: Result Of Structural Analysis Case.1
Step: Static Step.1
Plot: Factor of Safety.1
Frame
Increment
Time
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2 1 0.1 s
3 2 0.2 s
4 3 0.35 s
5 4 0.55 s
6 5 0.75 s
7 6 0.95 s
8 7 1 s
Factor of Safety.1
Max : 7.61e+4
Min : 3.04
10
9
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7
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5
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1
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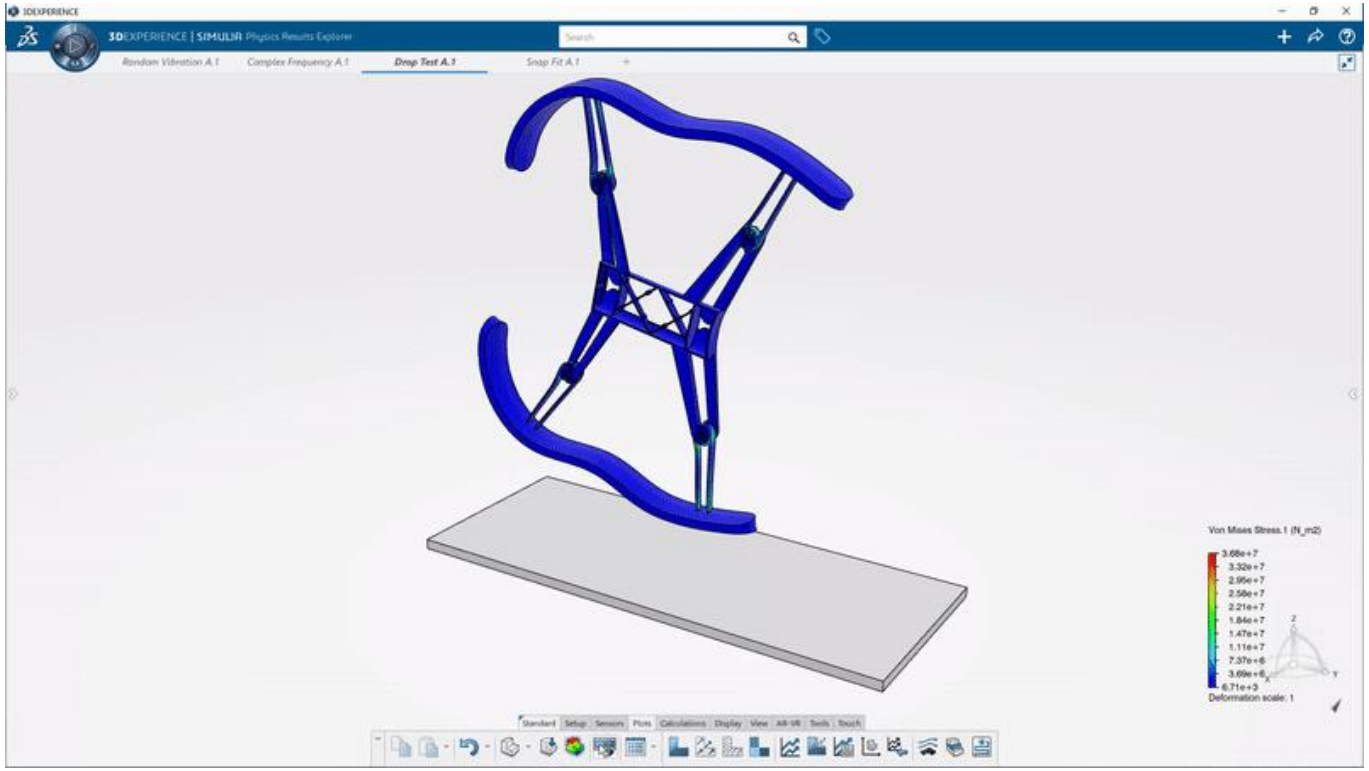
Deformation scale: 1

Където има интернет, има и облаци

… без опасност от валежи.

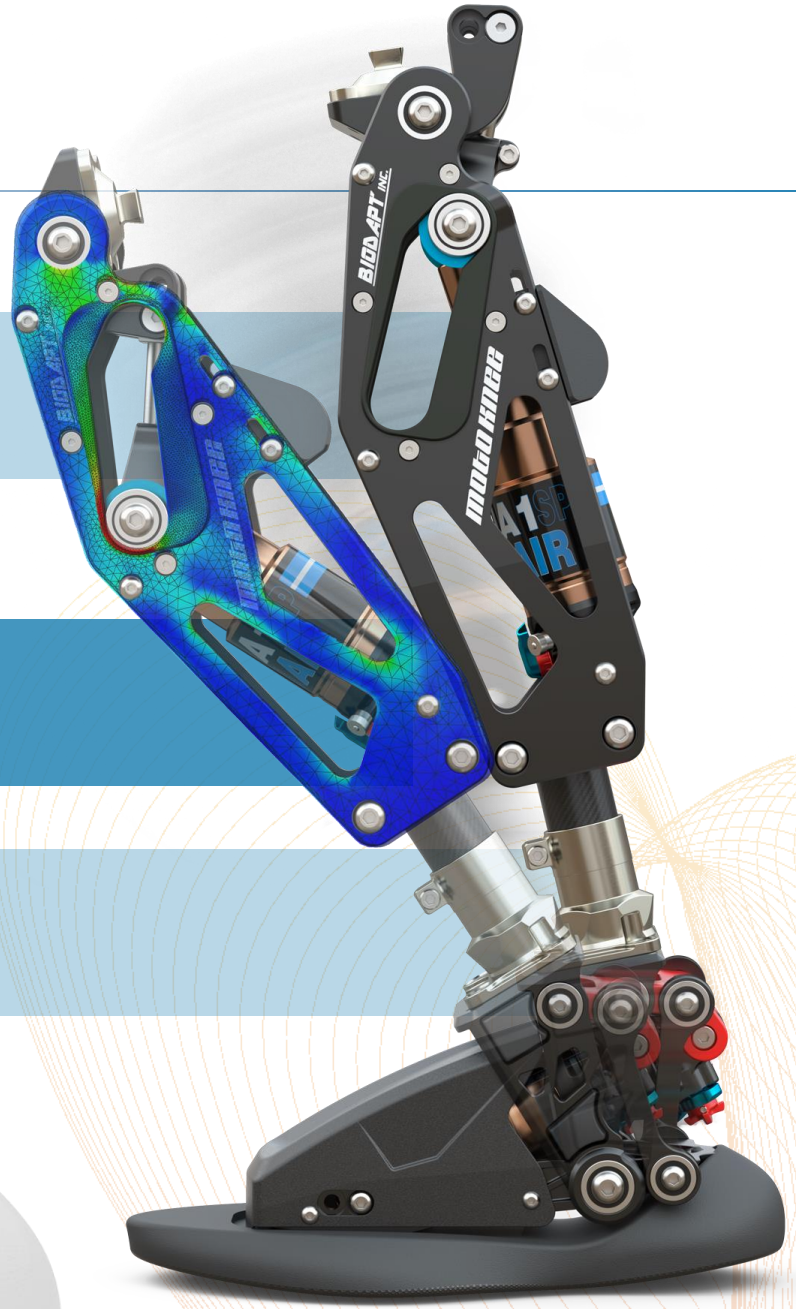


Structural Designer

Достъпни инженерни симулации

Structural Engineer

Портфолио



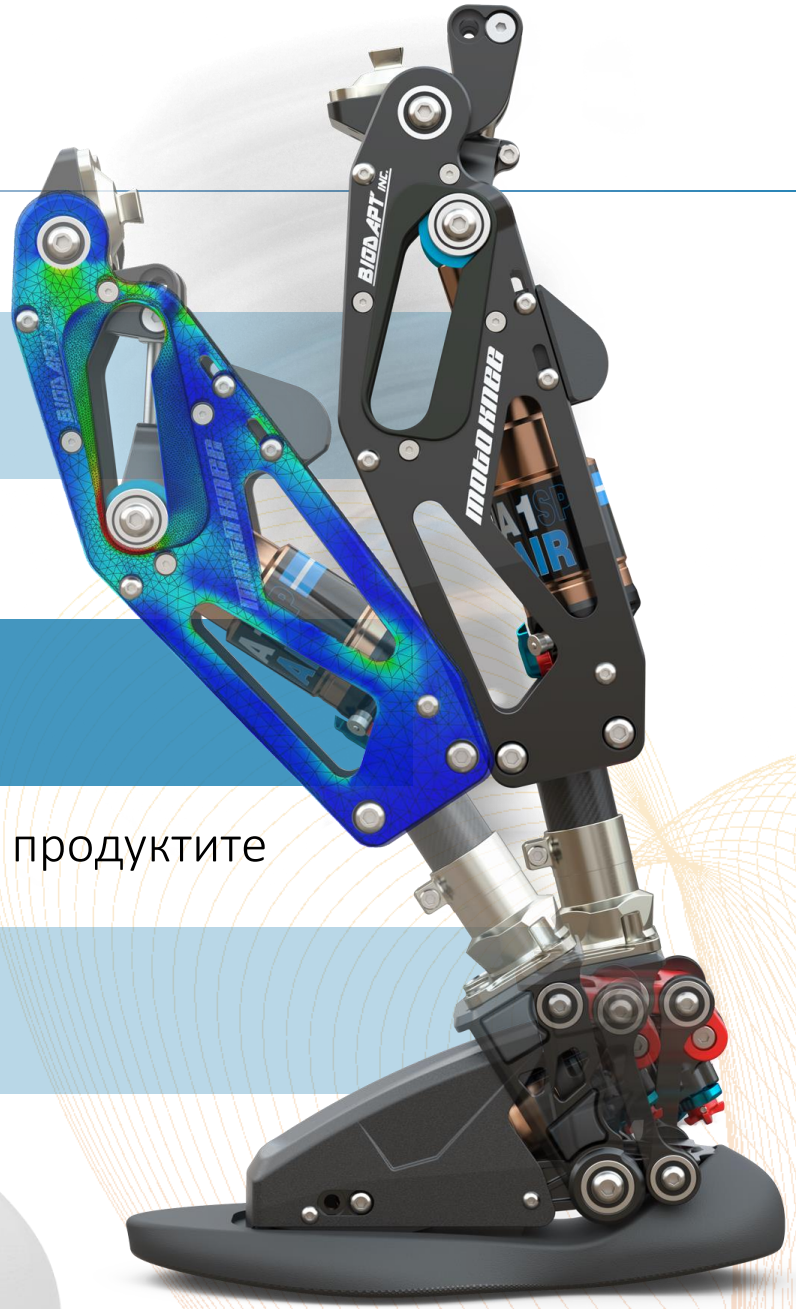
Structural Designer

Достъпни инженерни симулации

Structural Engineer

Информирани решения за подобряване на производителността на продуктите

Портфолио



Structural Designer

Достъпни инженерни симулации

Structural Engineer

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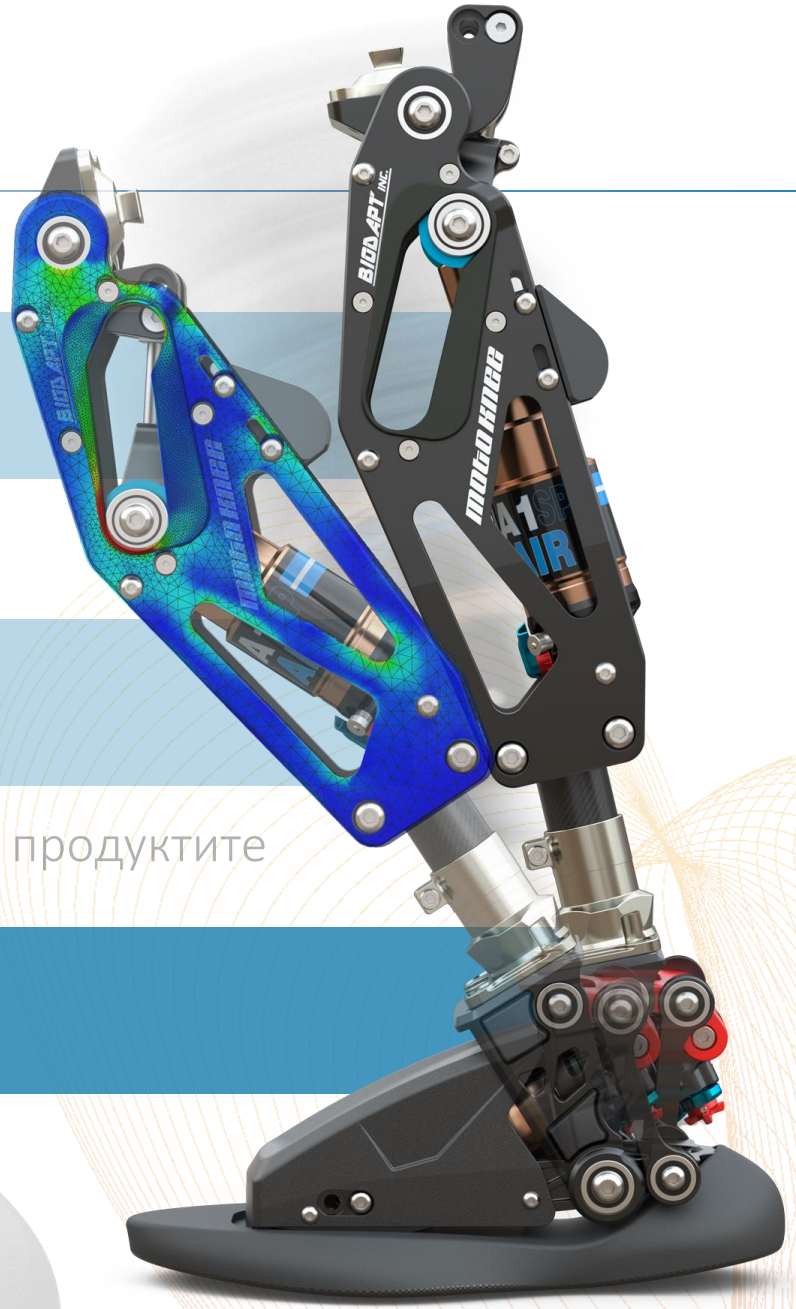
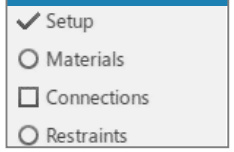


Портфолио

Structural Designer (SRD)	Structural Engineer (SLL)	Structural Performance Engineer (SFO)	Structural Mechanics Engineer (SSU)

Structural Designer (SRD)

- Linear Static
- Frequency
- Thermal
- Buckling
- Cloud Computing
- Assistant



Structural Engineer (SLL)

- Harmonic Response
- Modal Dynamic
- Advanced Meshing
- Advanced Elements
- Multi-Step
- Advanced Postprocessing

Structural Performance Engineer (SFO)

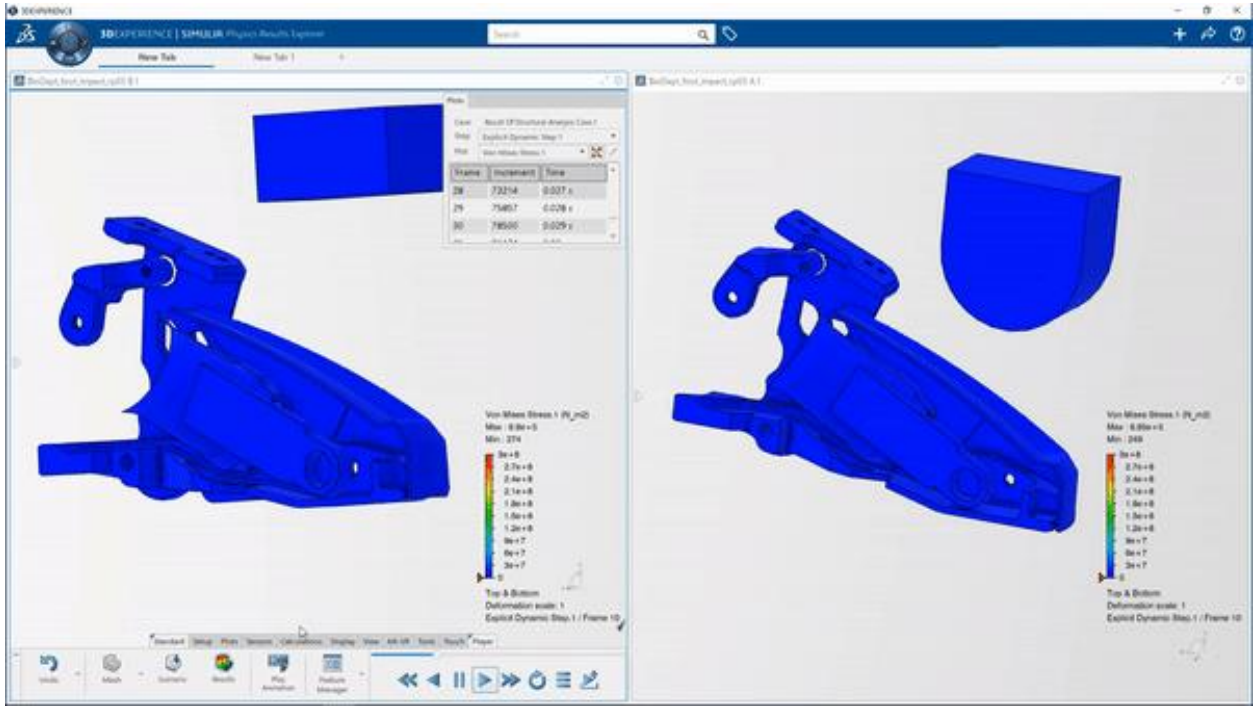
- Nonlinear Static
- Thermal-Structural
- NL Dynamic Implicit
- Material Failure
- Advanced Connectors
- Advanced Contact
- General Contact
- Advanced Materials
- *Fatigue

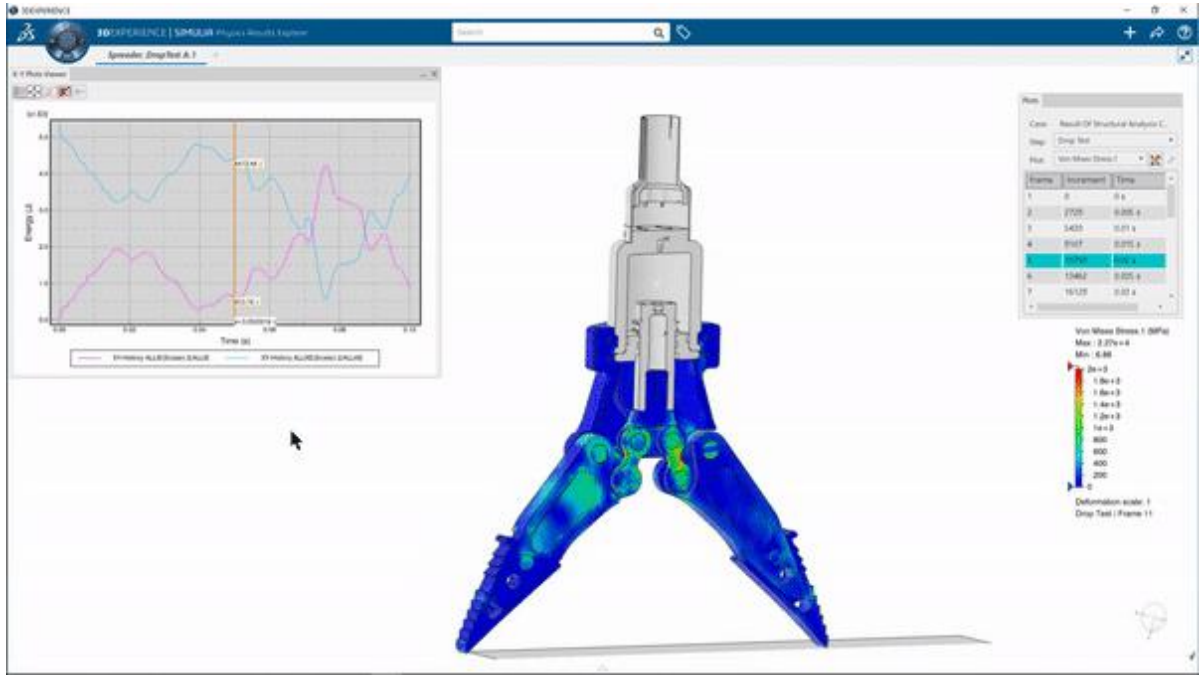
Structural Mechanics Engineer (SSU)

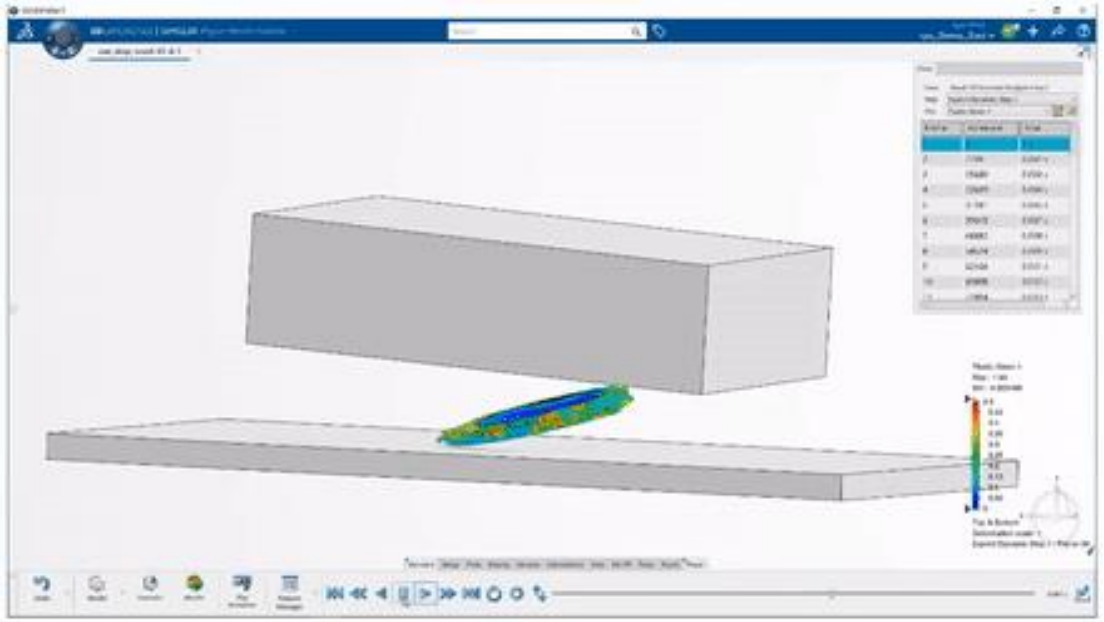
- NL Dynamic Explicit
- Quasi-Static Explicit
- Complex Frequency
- Random Vibration
- Geometry Preparation
- Material Calibration
- Restart

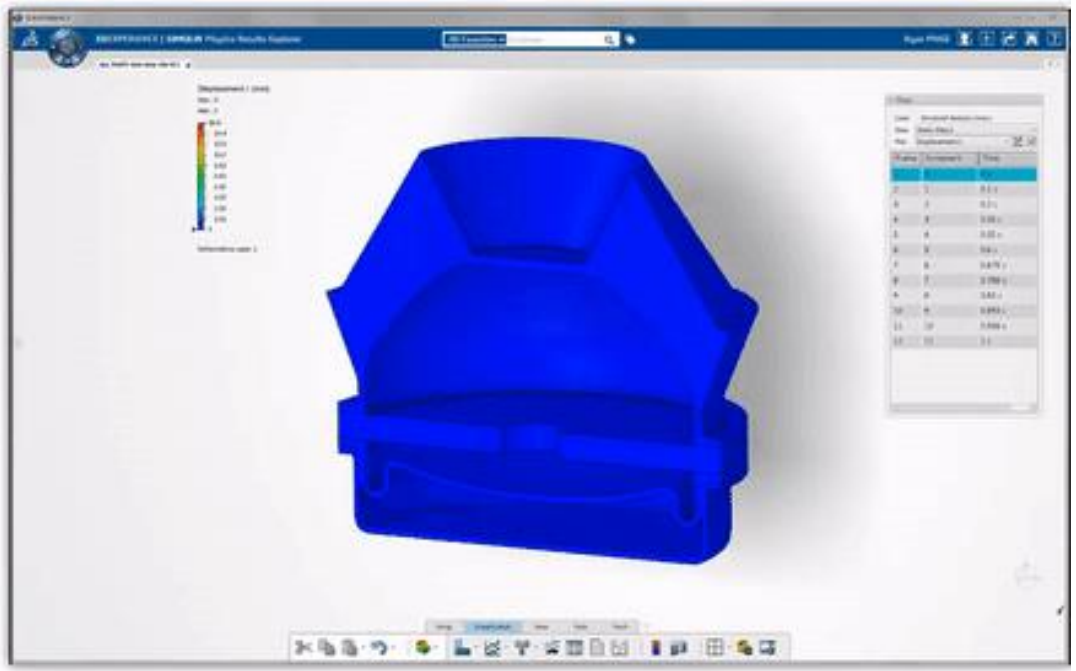
- Sub-Modelling

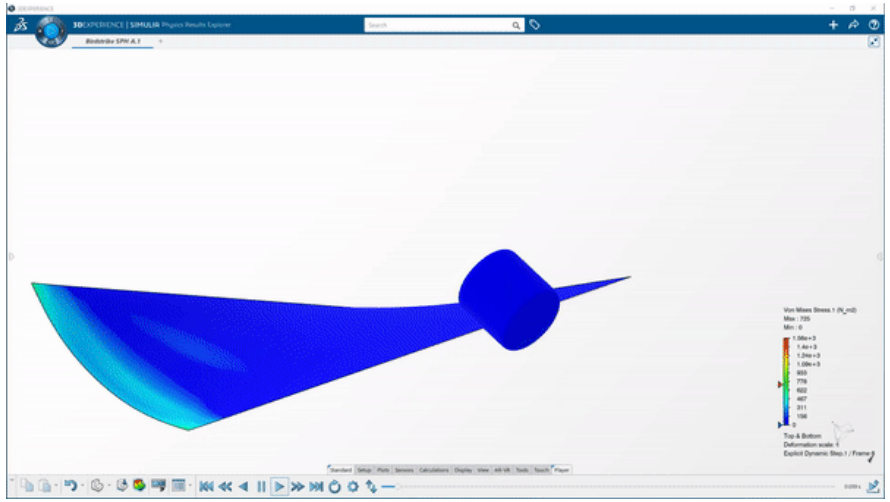
- Preloading

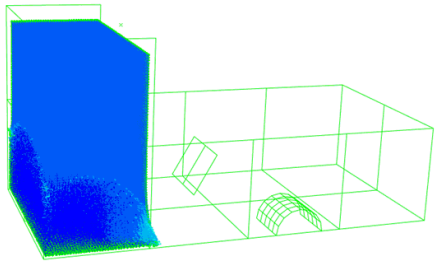


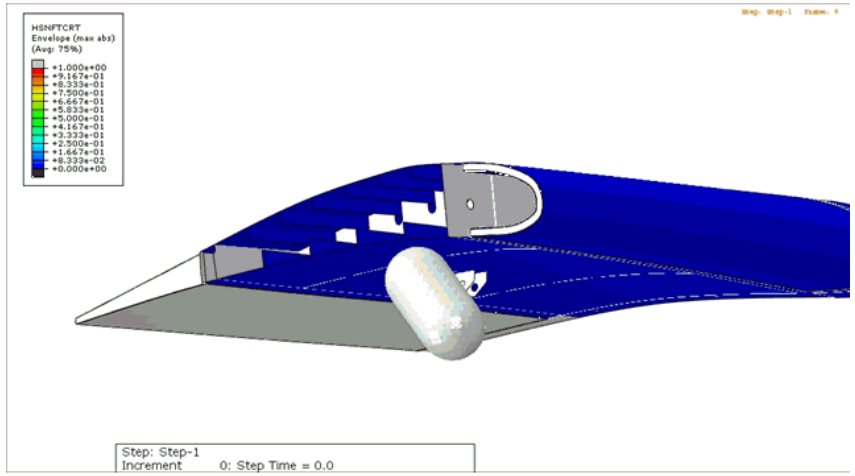








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+6.667e-01
+5.833e-01
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+3.333e-01
+2.500e-01
+1.667e-01
+8.333e-02
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Step: Step-1
Increment 0: Step Time = 0.0

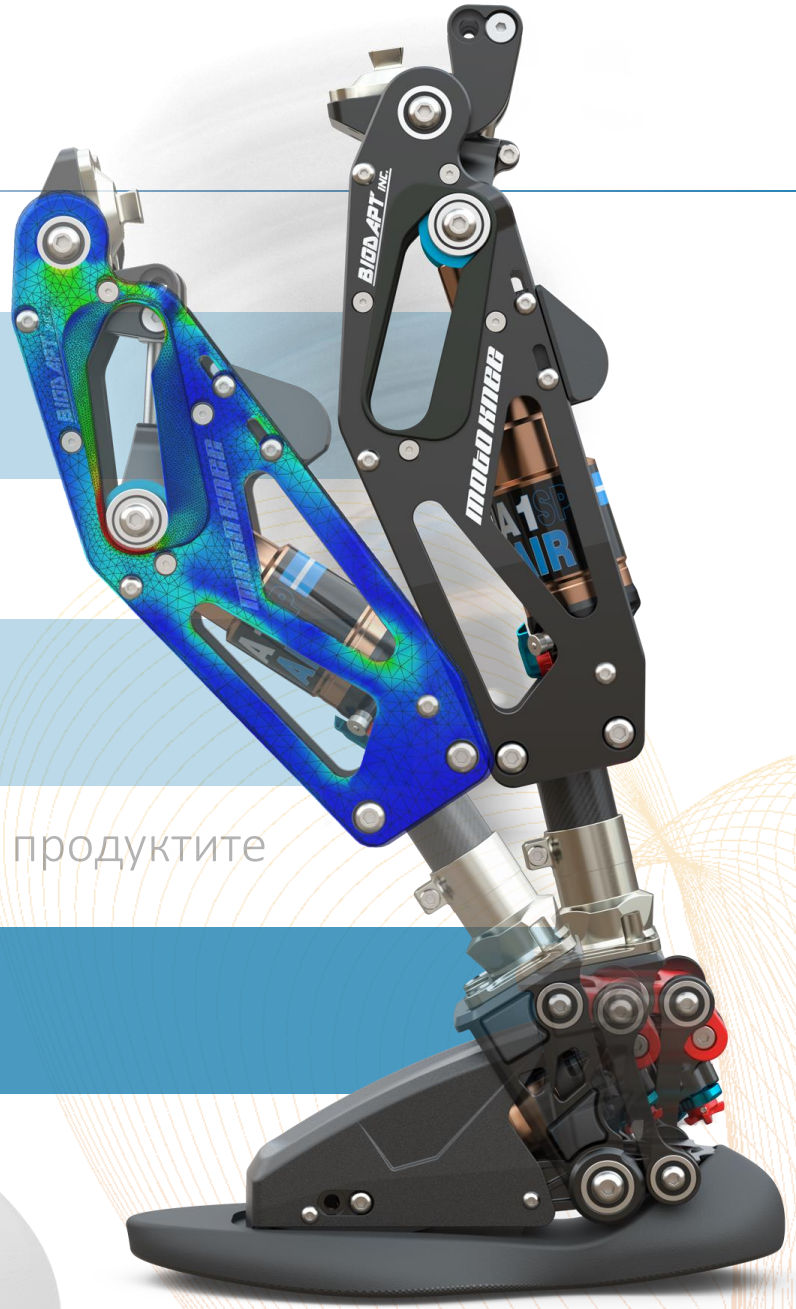
Structural Designer

Достъпни инженерни симулации

Structural Engineer

Информирани решения за подобряване на производителността на продуктите

Портфолио



Structural Designer

Достъпни инженерни симулации

Structural Engineer

Информирани решения за подобряване на производителността на продукта

Портфолио

Мощни технологии за справяне със сложни изследвания с увереност

Structural Designer

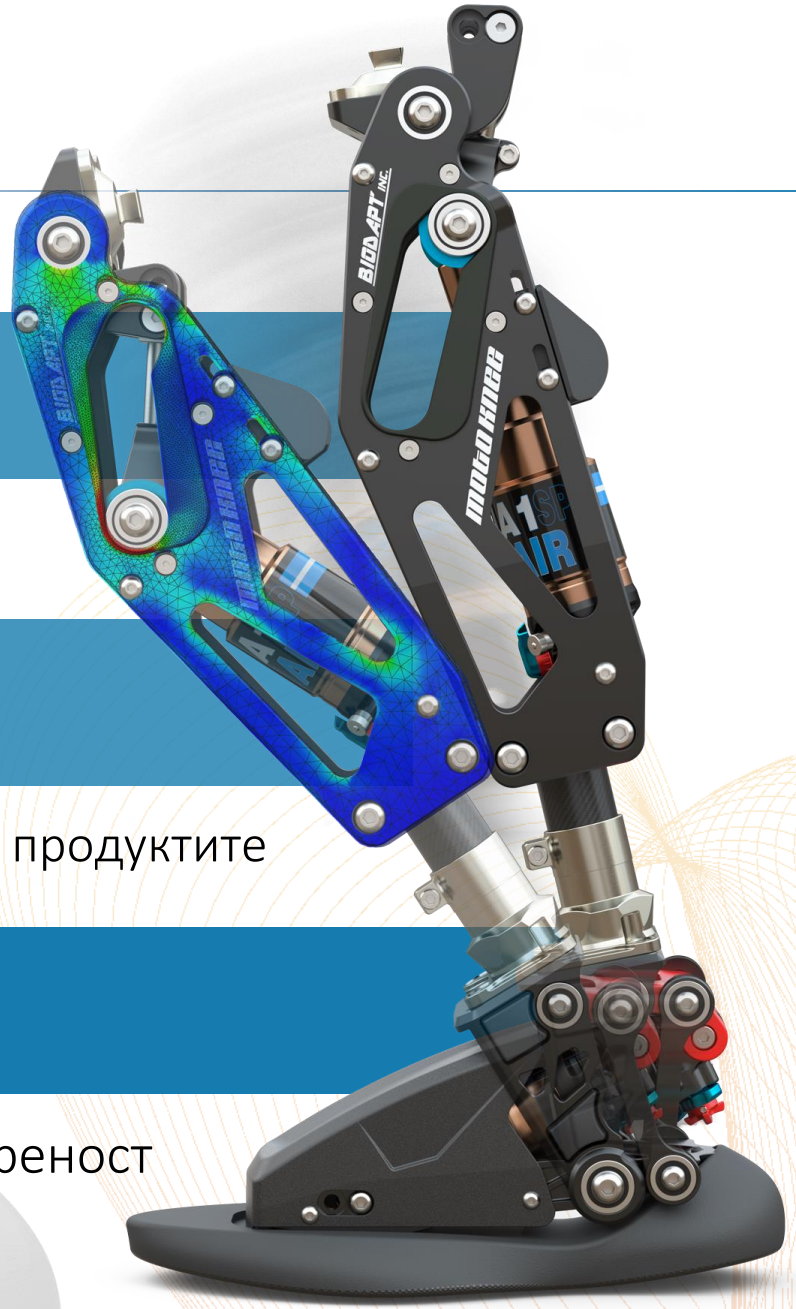
Достъпни инженерни симулации

Structural Engineer

Информирани решения за подобряване на производителността на продуктите

Портфолио

Мощни технологии за справяне със сложни изследвания с увереност



“Имаме възможност да проверим строгите изисквания за издръжливостта и деформацията... да анализираме натоварването и да моделираме около диапазона на движение... Откриваме оптималните размери, дизайн, материали... за да бъдат продуктите ни възможно най-леки и здрави.”

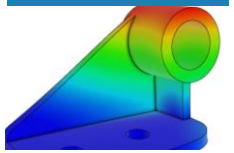
Mike SCHULTZ
BioDapt

Промоция 3DEXPERIENCE Works Simulation Adoption

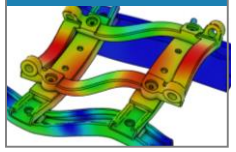
SOLIDWORKS

Structural Designer (SRD)

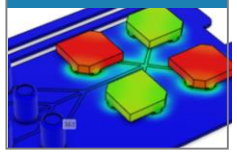
Linear Static



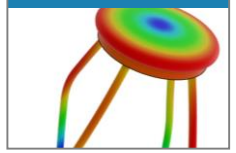
Frequency



Thermal

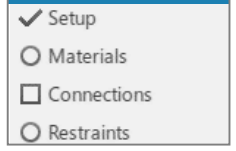


Buckling



Cloud Computing

Assistant



Collaborative Business

Collaborative Industry

Simulation Collaborator

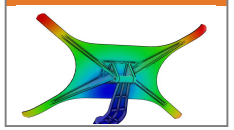
Collaborative Designer for SOLIDWORKS

3DEXPERIENCE Works

SOLIDWORKS Premium

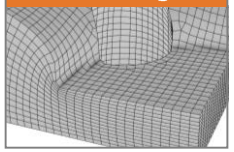
Structural Engineer (SLL)

Harmonic Response

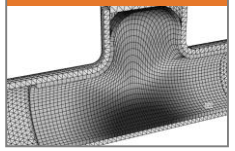


Modal Dynamic

Advanced Meshing

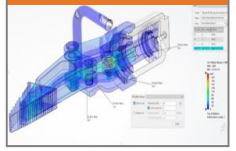


Advanced Elements



Multi-Step

Advanced Postprocessing



Collaborative Business

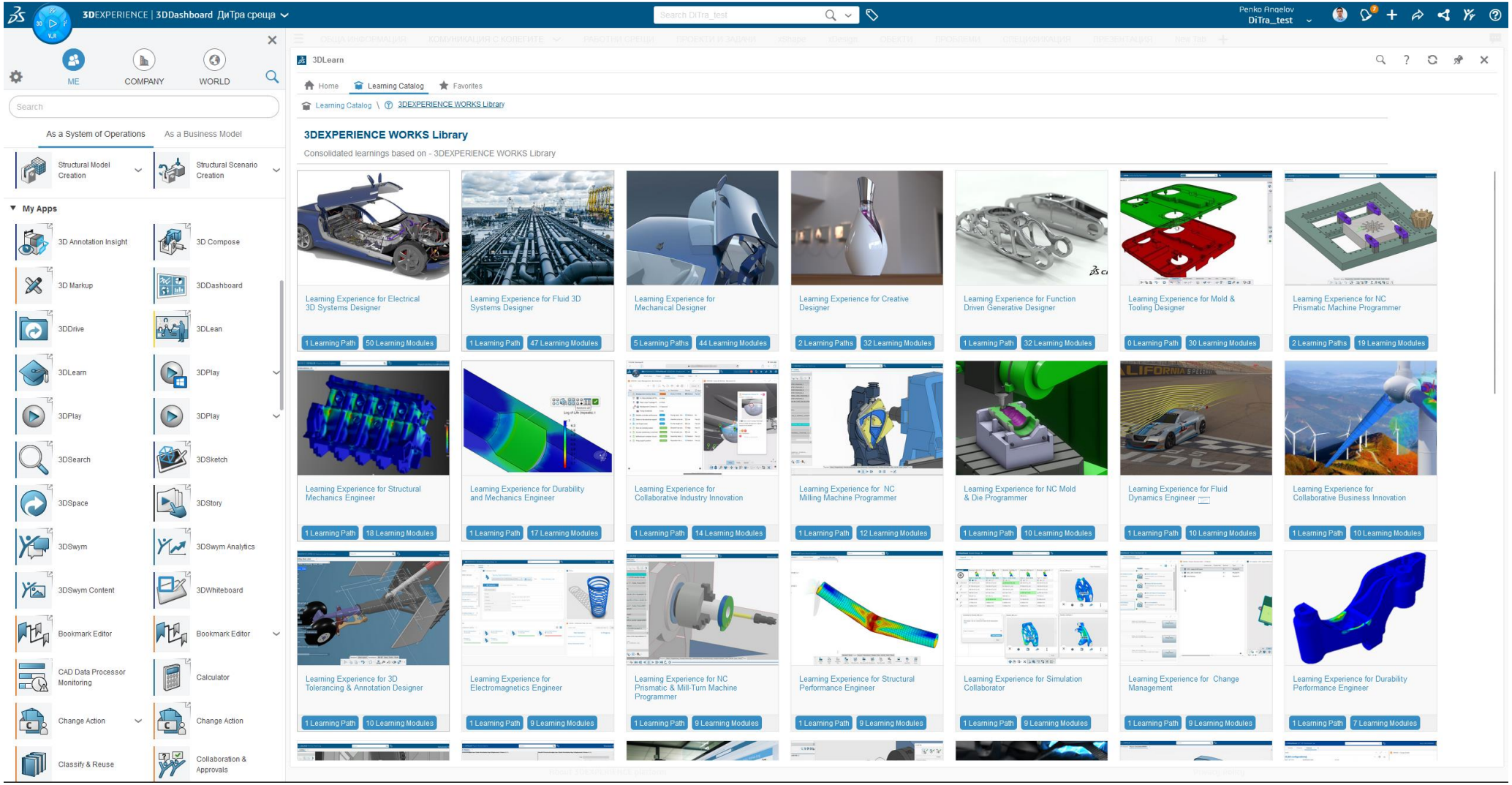
Collaborative Industry

Simulation Collaborator

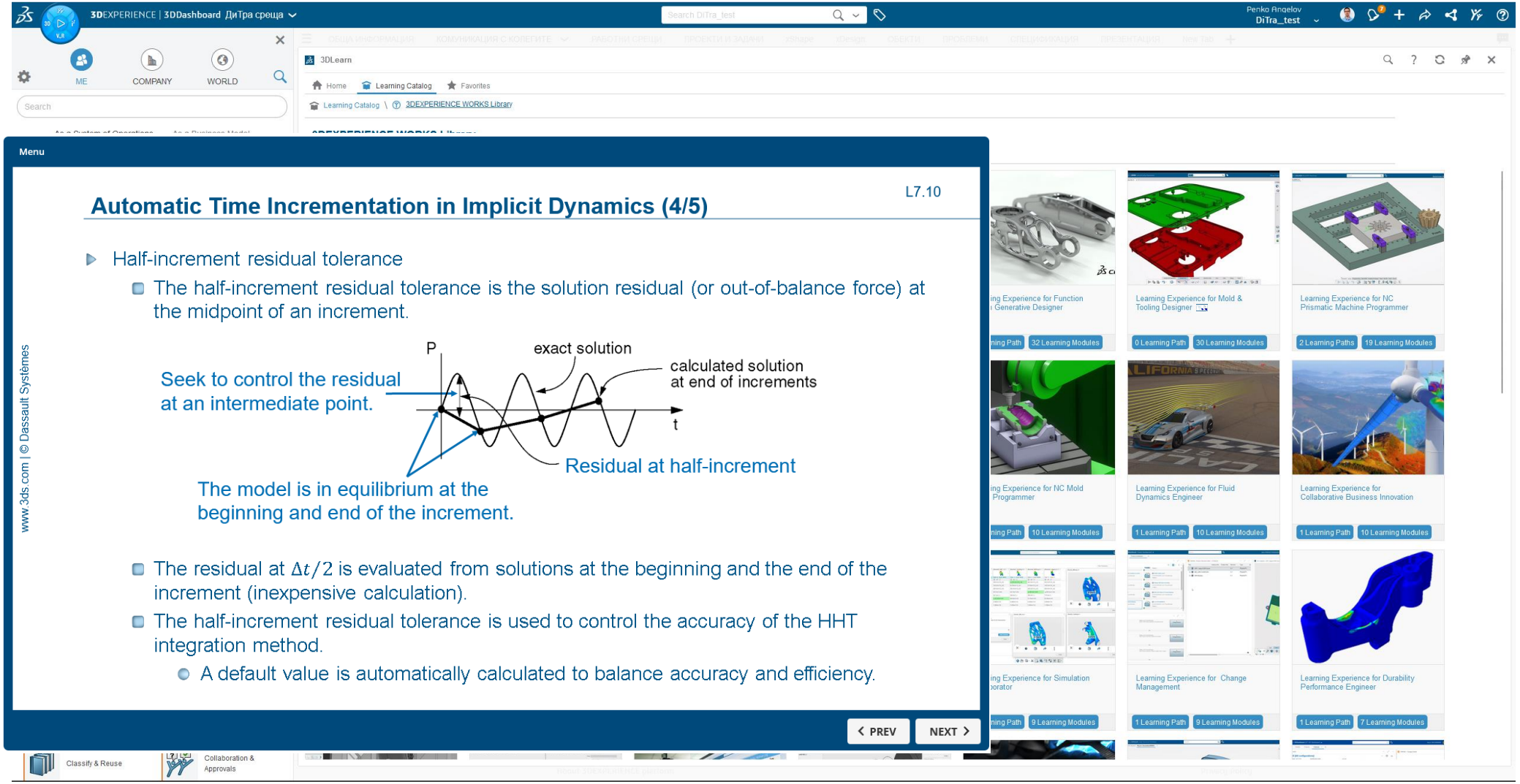
Collaborative Designer for SOLIDWORKS

3DEXPERIENCE Works

Промоция 3DEXPERIENCE Works Simulation Adoption



Промоция 3DEXPERIENCE Works Simulation Adoption



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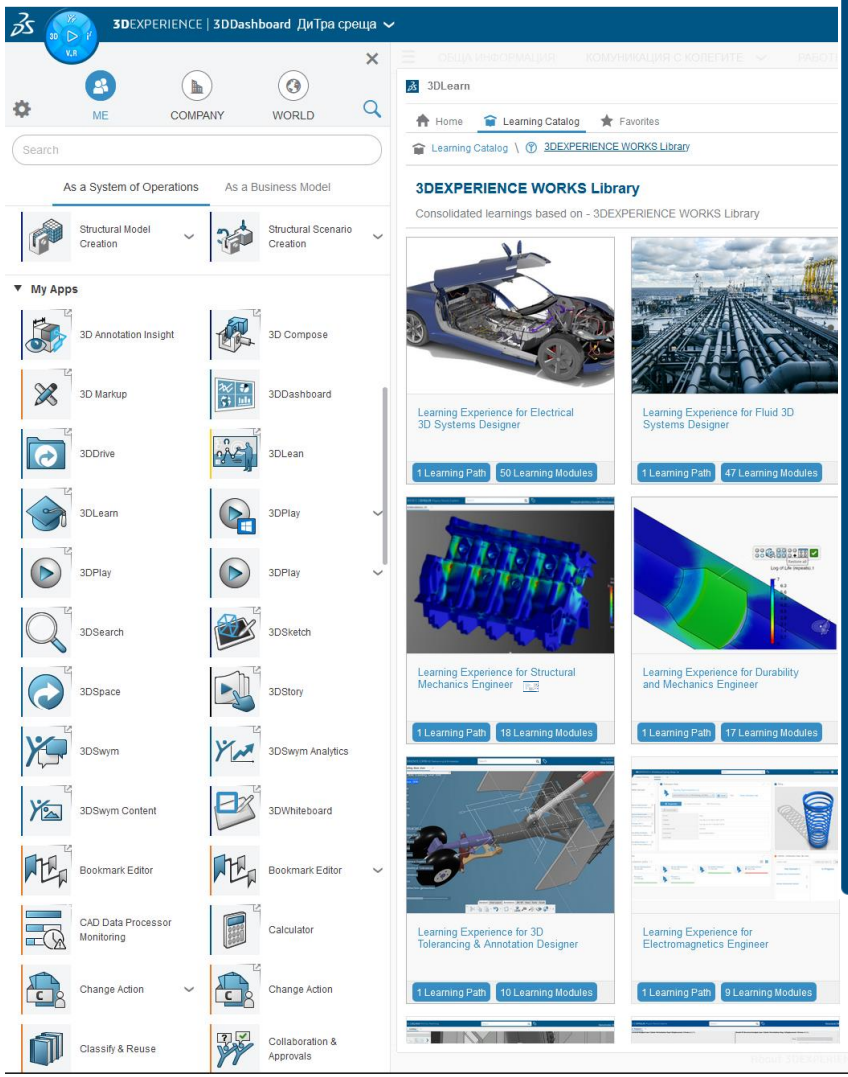

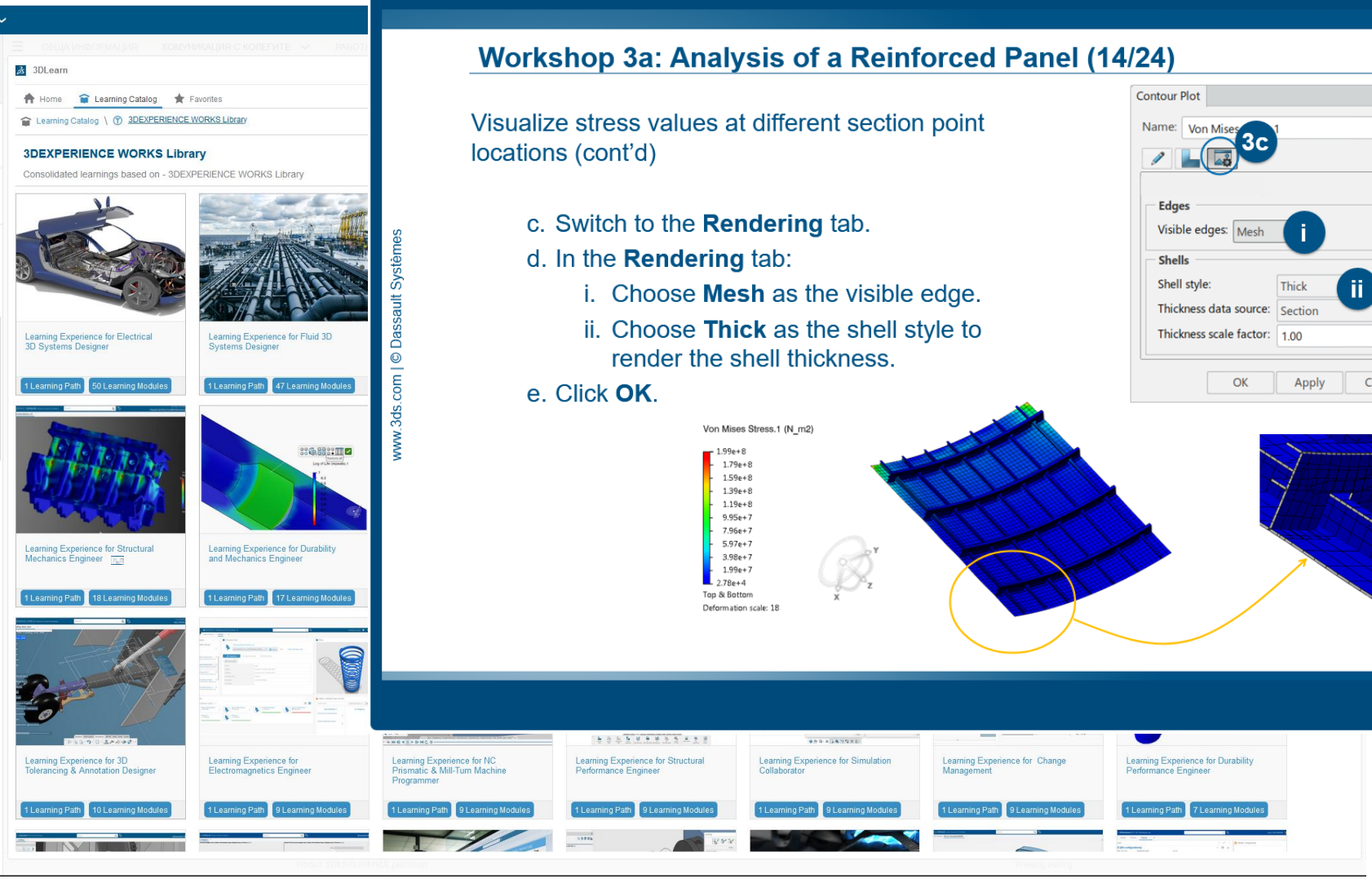

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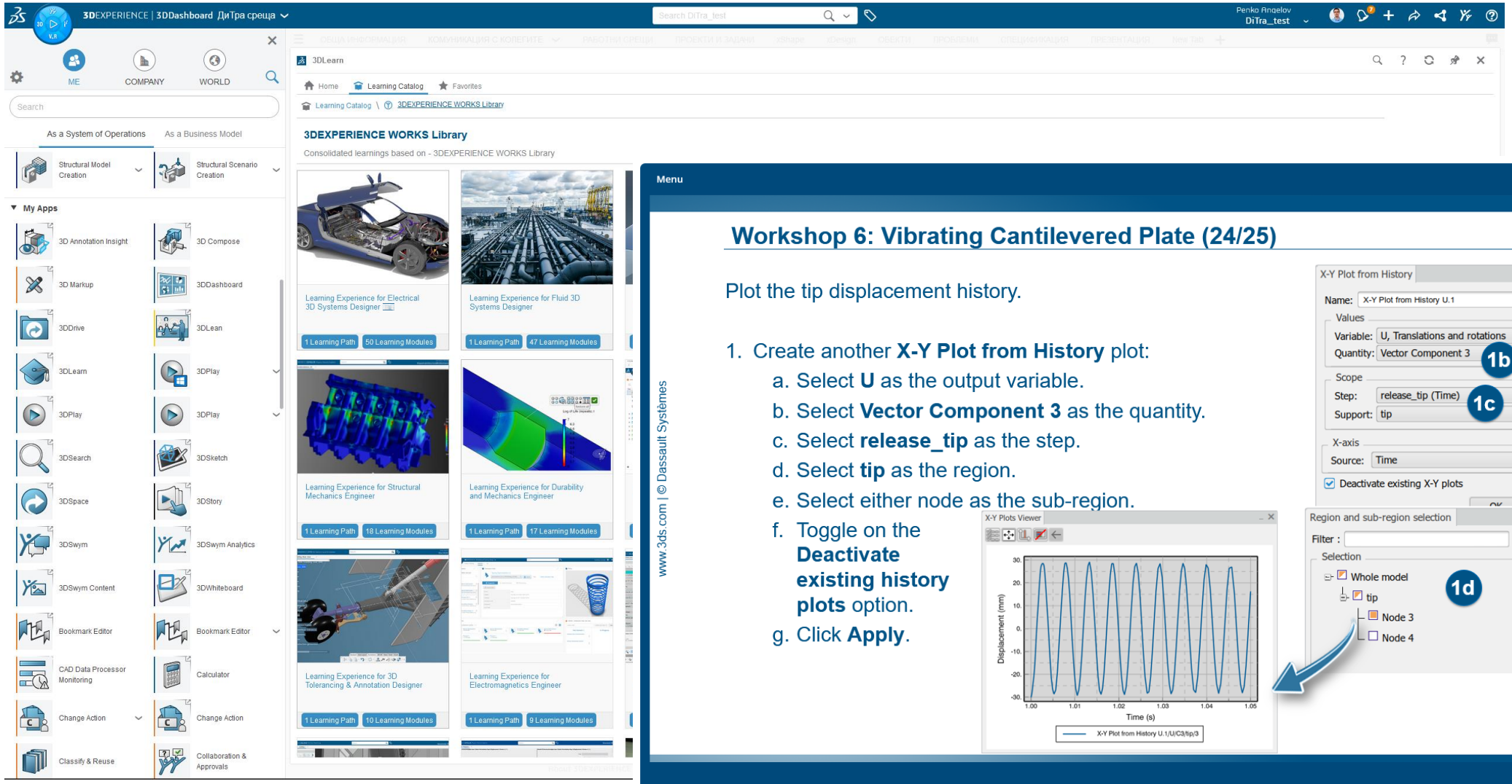

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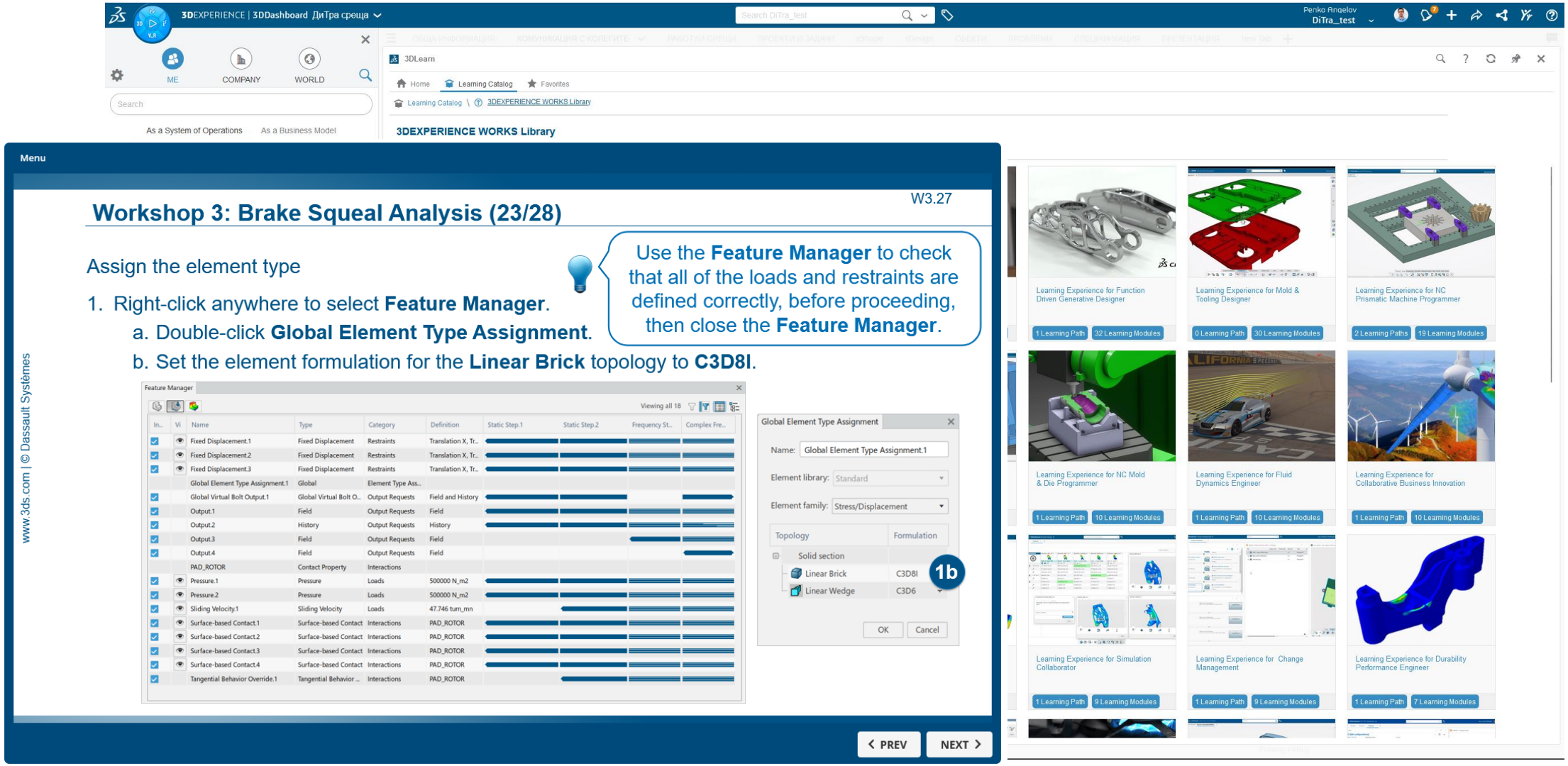

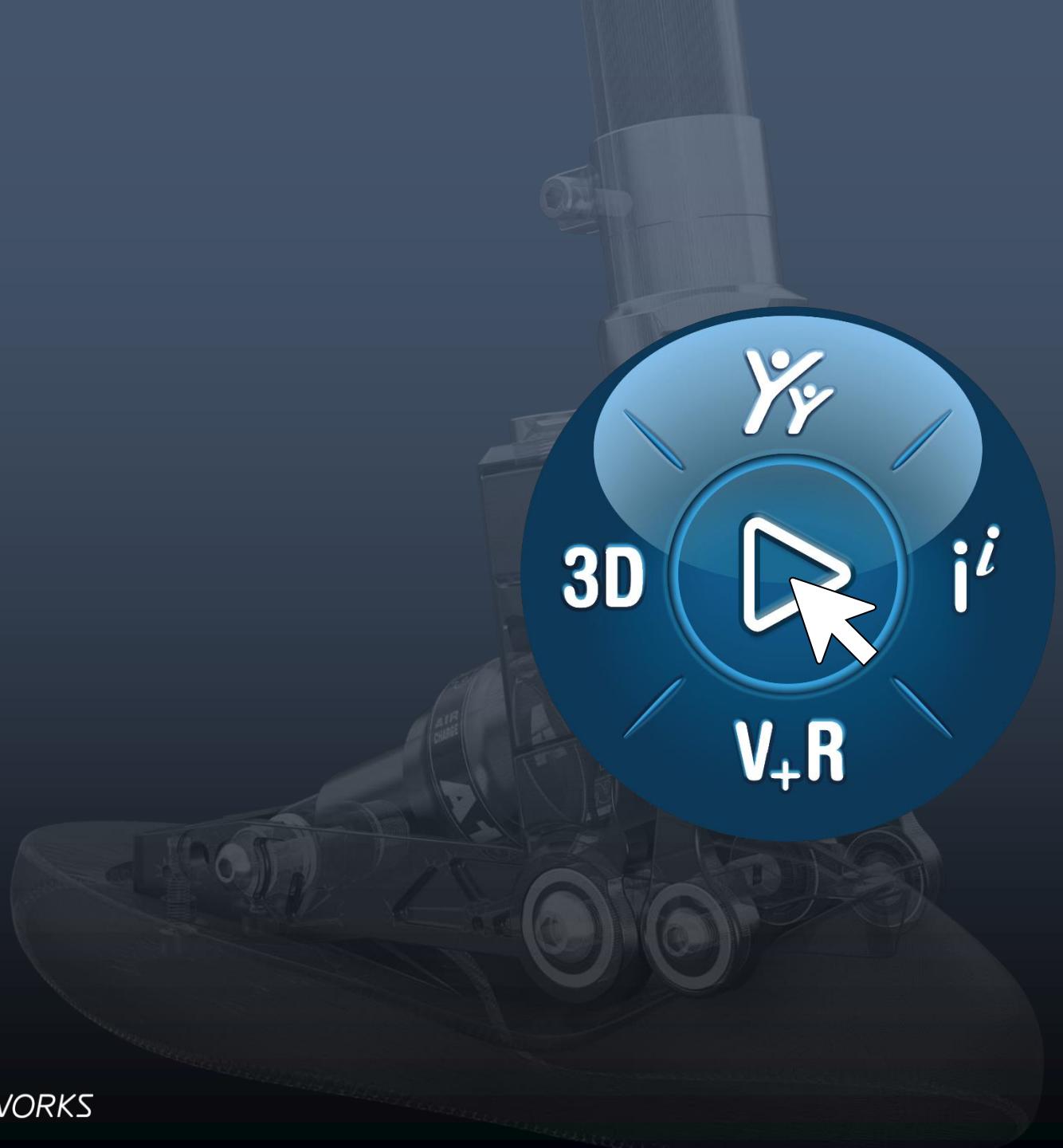

SOLIDWORKS

DiTra

DASSAULT SYSTEMES

Благодарим за вниманието!

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