Mass Customisation

CAE TECH

Software and services for design to manufacturing of configurable or bespoke products

Mass Customisation

Since 2016 CAE Tech has developed **bespoke cloud** software solutions for the **engineering** industry

Much of this work has created **tools** and **processes** that enable **mass customisation** of products

This is now the company core focus

Mass Customisation: Challenges

Customer Decision and Purchase

How can non-engineers interact with design data in an intuitive way?

How can customers assess the impact of design choices on their usage of the product?

How can cost modelling, ease of manufacturing, and product performance, data be available at the point of making choices?

Mass Customisation: Challenges

Inventory and Logistics

What is the impact of a dynamic bill-of-materials on inventory?

How can raw materials be used efficiently when part geometry changes?

How can design data be linked with e-commerce solutions?

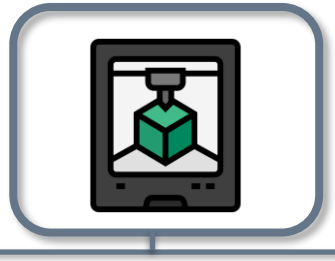
Mass Customisation: Challenges

Localization and Globalization

How can a small supplier service a global market with customisable products?

How can a product be made locally when available tools, processes and materials might differ?

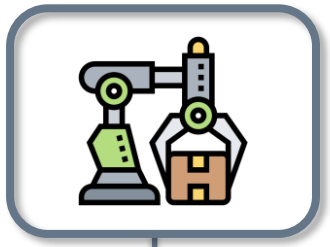
Mass Customisation: Challenges



Part Manufacture

- How can individual parts be created with variations?
- How can changing design data feed into manufacturing data without human input?
- How can manufacturing techniques be adapted for configurability?

Mass Customisation: Challenges

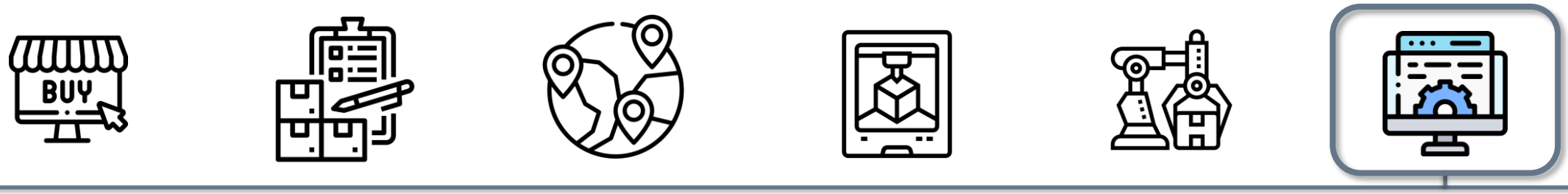


Product Assembly

How can technicians be given assembly drawings, instructions, and bills-of-materials, for customised products?

How can robotic assembly handle infinitely configurable designs?

Mass Customisation: Challenges



Maintenance and Lifecycle

- How can records be kept of manufactured products?
- How can installation and maintenance information be adapted for customised products?
- How can digital twins be created and monitored using design data?
- How can performance and robustness be assured for changing products?

Mass Customisation: Experience

"CHIRP3D"

Configurators for Highly-Involved Remote Purchases in 3D

By delivering an interactive experience to customers through the browser, remote purchases can be made on complex products that would normally require face-to-face interaction.

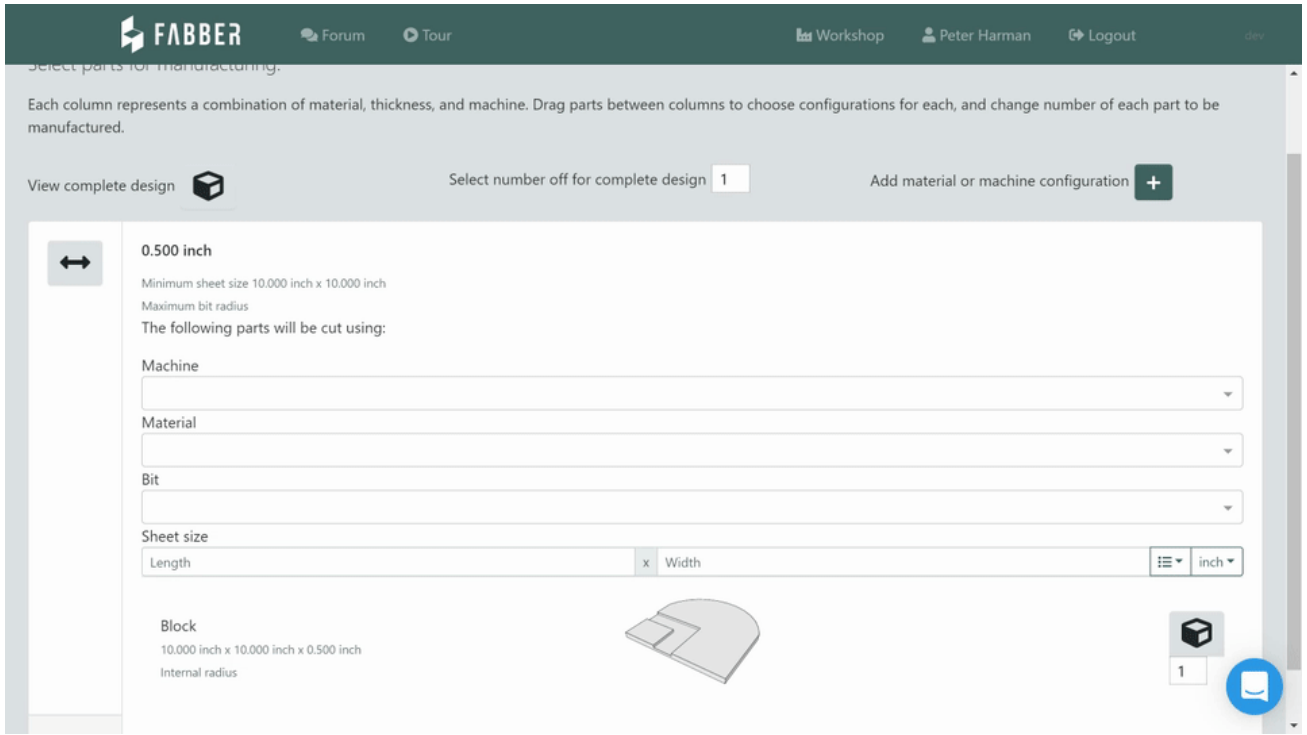
The use of CAD models enables this to link with further steps in the mass customisation process.

Mass Customisation: Experience

Fabber

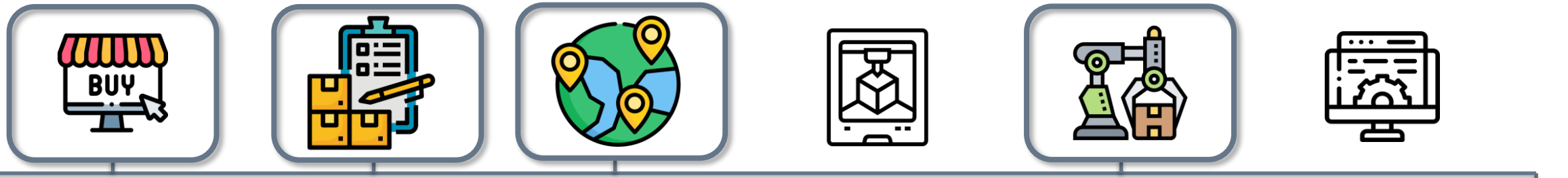
No other CAM tool competes with the complete, fast, and intuitive workflow in Fabber for 3D CAD to sheet goods production.

Customers are using this to rapidly, and locally, make custom products from cabinets to whole buildings.



AUTODESK FUSION 360 SketchUp onshape

Mass Customisation: Experience



Cameron Design House

To take their new brand of bespoke lights to a global market requires their global agents to be able to interact directly with designs in front of clients. The chosen designs then need to be documented for manufacture and assembly.

CAE Tech has developed a complete solution using CAD data directly in the sales process.

Mass Customisation: Experience

Even Keel Performance Insoles

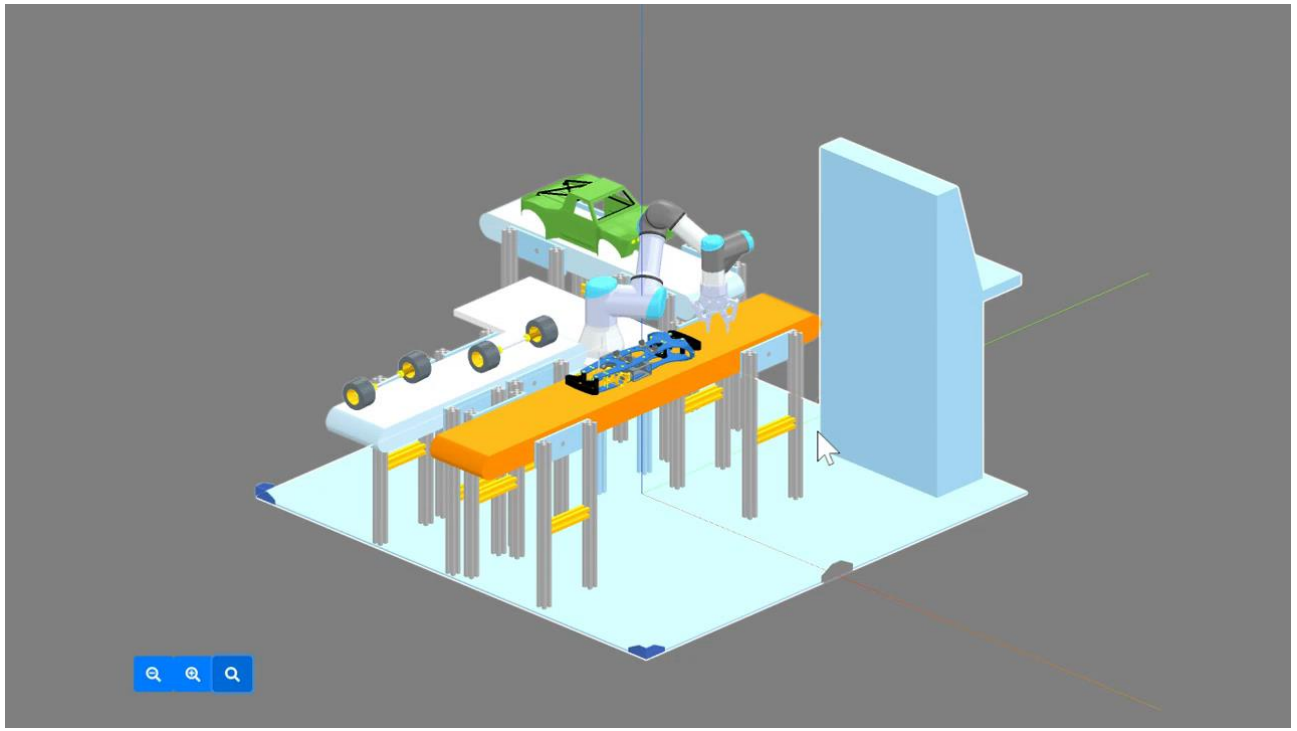
Using professional podiatry expertise, Even Keel have designed insoles that are adapted to each customers feet.

CAE Tech are developing a solution connecting data from customer measurements and orders through to manufacturing data, for efficient local production – even in podiatrists offices.

Mass Customisation: Experience

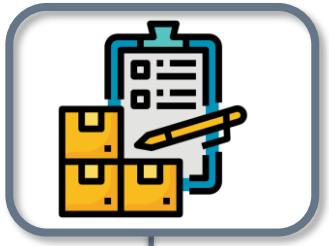
Trapezoid

Involving collaborations with Sanna Inc. and the Manufacturing Technology Centre, CAE Tech has invested in R&D into using parametric CAD data to drive robotic programming for automated assembly of customisable products.



SANNA GAZEBO onshape fmi Functional Mock-Up Interface modelica Language

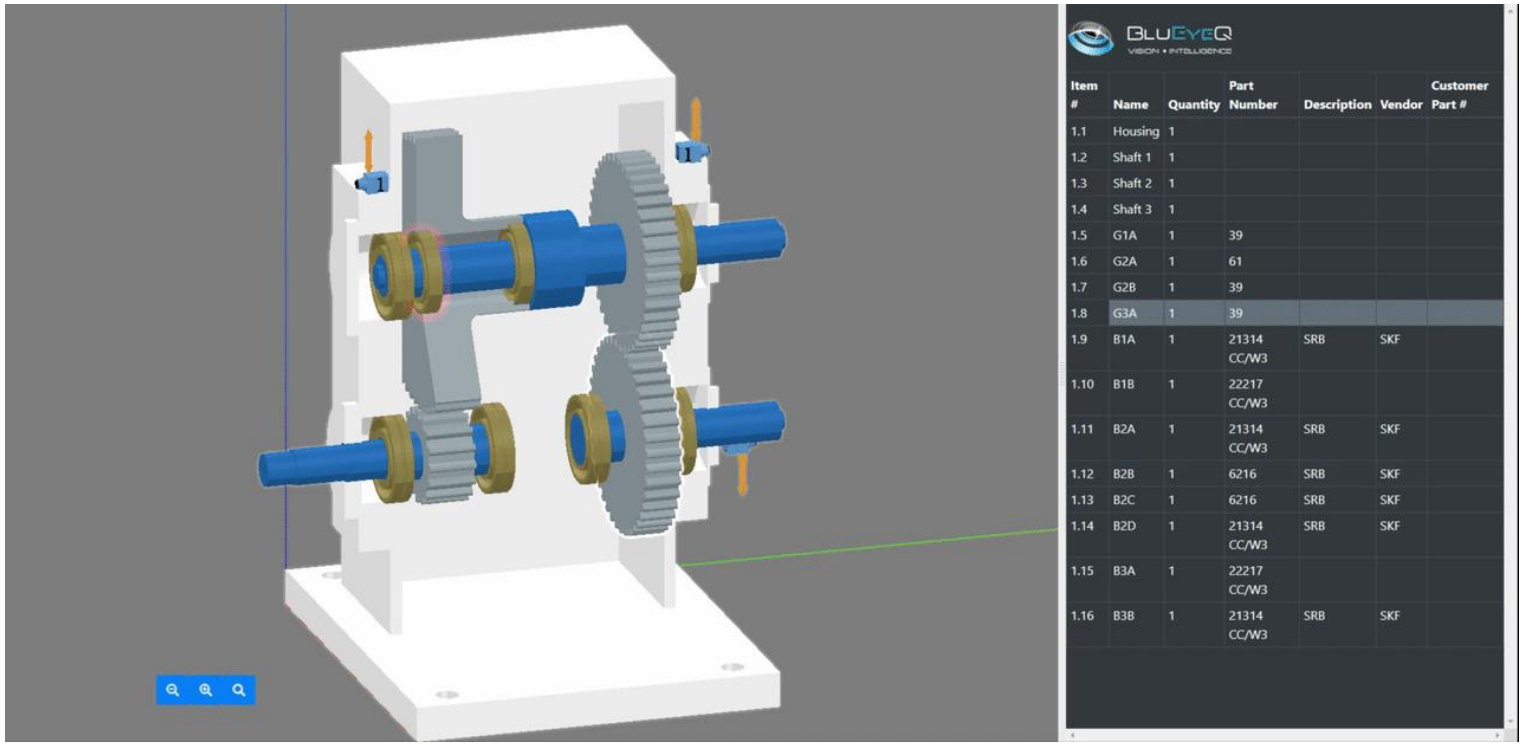
Mass Customisation: Experience



BluEyeQ

Using dynamic 3D visualisation of real assembly data combined with predictive maintenance data, developed by CAE Tech, BluEyeQ can deliver Digital Twins for one-off industrial plant equipment

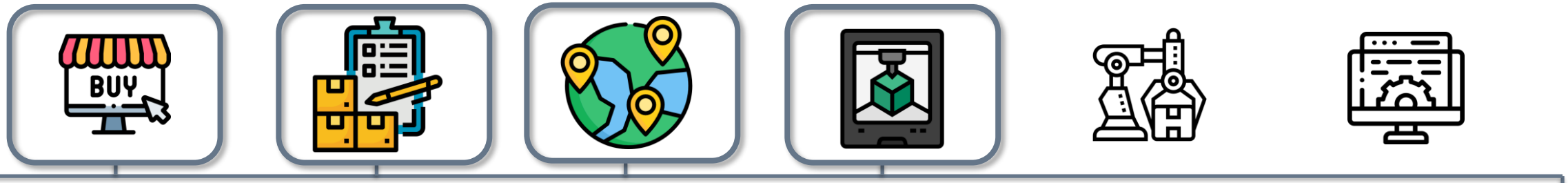
onshape



BLUEYEQ
VISION • INTELLIGENCE

Item #	Name	Quantity	Part Number	Description	Vendor	Customer Part #
1.1	Housing	1				
1.2	Shaft 1	1				
1.3	Shaft 2	1				
1.4	Shaft 3	1				
1.5	G1A	1	39			
1.6	G2A	1	61			
1.7	G2B	1	39			
1.8	G3A	1	39			
1.9	B1A	1	21314 CC/W3	SRB	SKF	
1.10	B1B	1	22217 CC/W3			
1.11	B2A	1	21314 CC/W3	SRB	SKF	
1.12	B2B	1	6216	SRB	SKF	
1.13	B2C	1	6216	SRB	SKF	
1.14	B2D	1	21314 CC/W3	SRB	SKF	
1.15	B3A	1	22217 CC/W3			
1.16	B3B	1	21314 CC/W3	SRB	SKF	

Mass Customisation: Experience

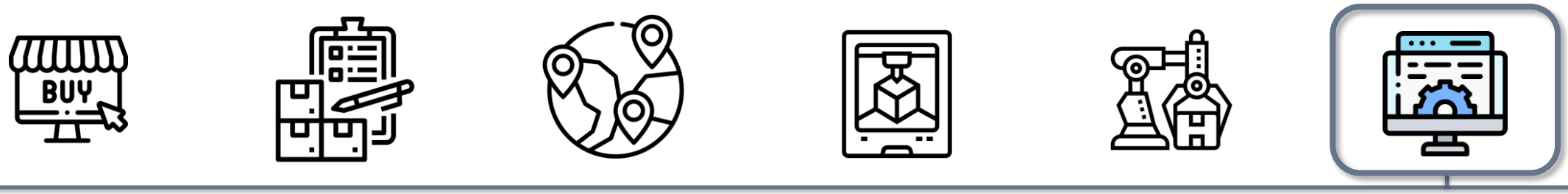


Future Joinery Systems

With support from CAE Tech, FJS is changing how architects specify and order locally-manufactured joinery products, from within architectural CAD products

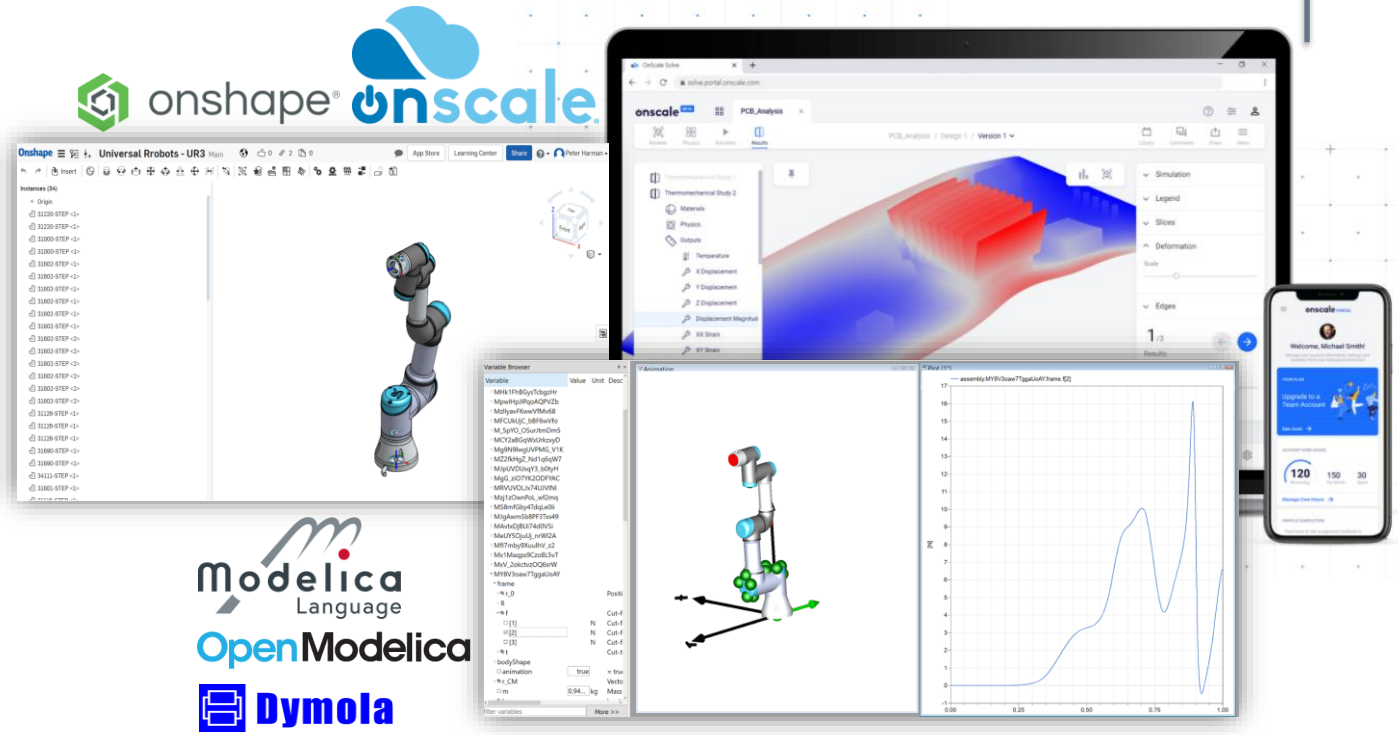
onshape AUTODESK REVIT SketchUp VECTORWORKS

Mass Customisation: Experience



Simulation

CAE Tech provides expertise to leading engineering software providers to ensure customisable products can be simulated for robustness and performance over their full range of configurations.



Find Out More

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