TECH SOFT 3D

COMPANY
Dassault Systèmes

LOCATION
World HQ: Vélizy-Villacoublay, France

SOFTWARE
SolidWorks eDrawings

SOFTWARE DEVELOPMENT KITS
HOOPS Visualize
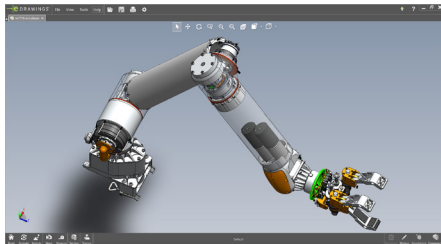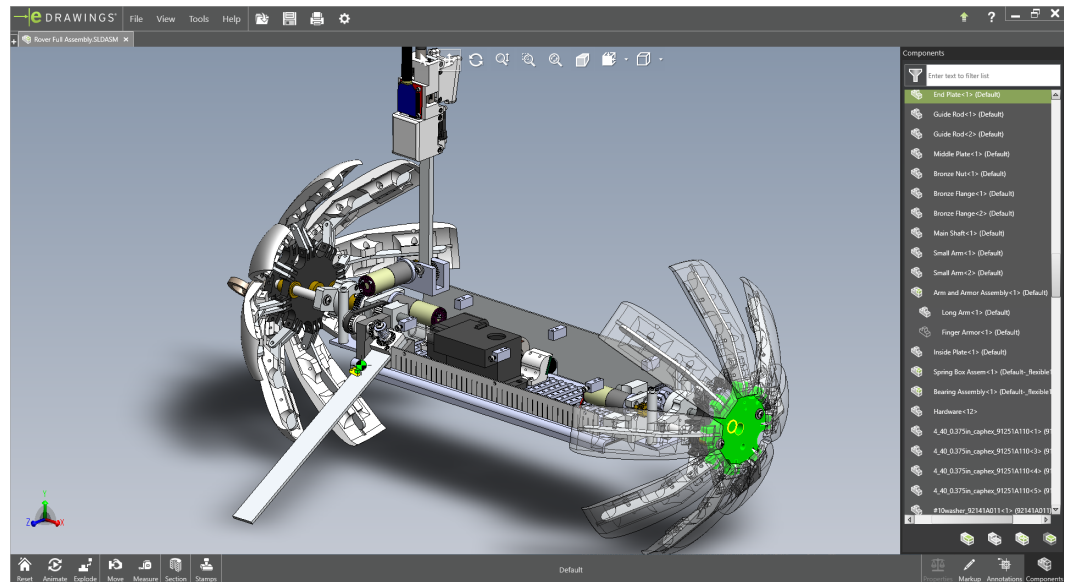**HOOPS Exchange**
HOOPS Communicator

COMPANY WEBSITE
solidworks.com

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> — **Arnav Mukherjee, Development Director, Viewer & Experimental Technology, SolidWorks**

Tech Soft 3D case study: SolidWorks

Expanding Relationship with Tech Soft 3D Helps SolidWorks Bring AR/VR to Popular eDrawings Product

The Challenge

Dassault Systèmes SolidWorks Corp. develops and markets 3D CAD design software, analysis software, and product data management software. By providing best-in-class, tightly integrated tools for every area of product development and management, SolidWorks enables enterprises to speed each stage of the development cycle.

SolidWorks eDrawings – a 2D, 3D, and AR/VR (augmented reality and virtual reality) design communication tool for stakeholders in the design to manufacture process – is a key offering in the portfolio.

"Think of SolidWorks as the content creator and eDrawings as the consumption mechanism," explained Arnav Mukherjee, Development Director, Viewer & Experi-

mental Technology at SolidWorks. "Design engineers create content in SolidWorks, and manufacturing teams or other downstream groups use eDrawings to view and consume that content."

Developing the eDrawings product for the marketplace was not a simple undertaking. "When you start looking at the various platforms that eDrawings supports, it becomes a bit complicated," said Mukherjee. "There's Windows, Mac desktop OS, iOS, Android, and multiple browsers – Internet Explorer, Chrome, Safari, Edge. Having that many code bases would be insanity, so we try to make eDrawings as modular as possible – and that's one of the reasons we use Tech Soft 3D's HOOPS components."

3S SOLIDWORKS

Simplifying Ongoing Development, Supporting New Capabilities

HOOPS Visualize – a gold standard graphics engine – and HOOPS Exchange, the fastest and most accurate CAD data translation toolkit, serve as common components across eDrawings' Windows, Mac, iOS, and Android platforms.
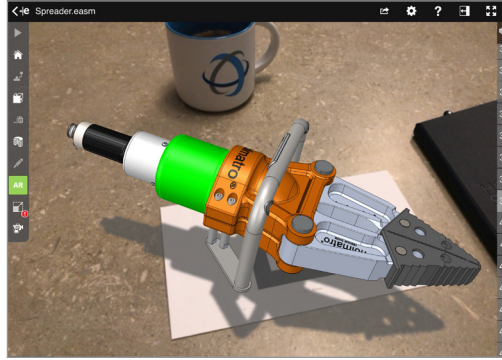
"In addition to modular design, part of our strategy is to have maintainable code," said Mukherjee. "HOOPS helps enormously on that front. When there are advances in graphics technology, we don't want to deal with that headache. We want that to be Tech Soft 3D's headache."

eDrawings' strategy also involves designing for longevity – and that includes adapting to entire paradigm shifts in how its products are used.

"It's no longer just a desktop world," said Mukherjee. "People are moving to the web and the cloud. The question became: how do we take something like eDrawings – which has been around since 1999 and has been a native application – and move it to the browser?"

HOOPS Communicator solves this challenge by providing a simple yet powerful software development kit for advanced web-based engineering applications with a robust, purpose-built, high-performance graphics kernel focused on engineering graphics.

"The WebGL performance of eDrawings is very impressive, especially the speed," said Mukherjee. "You can open up a 3D model with thousands of components and inter-rogate it, section it, and explode it, and the graphics respond instantly."

In recent years, eDrawings has added AR and VR capabilities that extend its use into virtual product evaluations by design teams and customers. Using the mobile (iOS and Android) version of eDrawings, anyone on a design team can see a product at full scale, so that its true size is obvious to everyone.

"What you can do with AR is pretty cool," said Mukherjee. "You can place any specific product variation on the table in front of you – or in front of your customer – and experience it and interact with it as if it's there. Obviously, that sort of capability isn't possible without powerful data exchange and data visualization."

"We use so many HOOPS products, it's almost like we went to Tech Soft 3D and said 'Give us one of everything'," joked Mukherjee. "But the fact is, these components work very seamlessly for the workflows we need to support. It makes life easier for us and, ulti-mately, helps us deliver a better product."

Industry:
- Manufacturing

Challenge:
- Provide support for multiple platforms, including web browsers

- Simplify maintenance of code base and enable modular design

- Evolve product to support new capabilities like AR/VR

Solutions:
- HOOPS Visualize, the gold standard for high perfor-mance 3D visualization

- HOOPS Exchange, the leading CAD data translation toolkit

- HOOPS Communicator, the simple, powerful toolkit for advanced 3D web visualization

Results:
- Ensure eDrawings is available on a full range of platforms, from desktop to web and mobile, expanding potential customer base

- Reduce resources required to support code base, enabling focus on core competencies and competitive differentiators

- Enable rapid visualization of models with thousands of components

- Give customers new ways to streamline their processes by providing support for work-flows around AR/VR

Contact Tech Soft 3D to learn more about how the HOOPS software development kits can benefit your organization.

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