onshape by ptc

Onshape Case Study

WILD WEST SYSTEMS

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INDUSTRY: AEROSPACE & DEFENSE

The Challenge

For Wild West Systems, speed is more than a competitive advantage; it's a business requirement.

The Texas-based aerospace startup develops advanced weapon systems for UAVs (unmanned aerial vehicles) in a highly regulated environment. Their 10-person engineering team works alongside machinists, manufacturing, and other teams to move from concept to prototype, then to testing and production. Maintaining alignment across disciplines as designs evolve quickly is critical to their success.

"As a startup, you want to iterate as fast as possible," says Moshe Baum, Co-Founder and CTO. "You want to prototype as fast as possible. You want to test as fast as possible. Speed is the number one advantage we have."

That pace creates unique challenges. Designs evolve constantly as teams gather feedback from testing, manufacturing, and real-world performance. Engineers need to explore multiple design paths simultaneously while maintaining full traceability and control over released designs.

Legacy CAD workflows built around local installations, file management, check-in/check-out processes, and standalone PDM systems would have caused unacceptable friction and slowdowns.

Instead, they built their product-development process around PTC's Onshape Government from day one. By combining Onshape's cloud-native CAD+PDM tools with Onshape Government's built-in compliance features, Wild West Systems keeps designs moving with simplified, always-on compliance.

Results

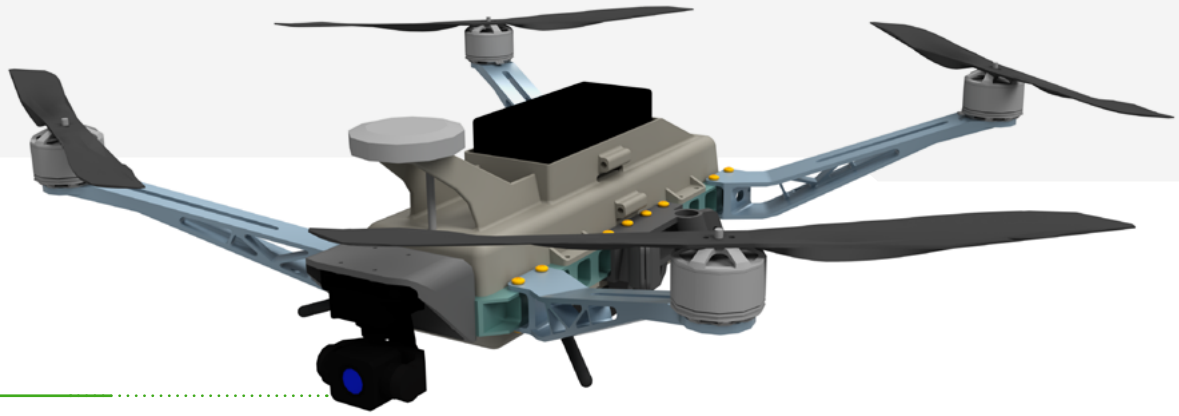
- **Supported secure, compliant aerospace development**
  with Onshape Government
- **Accelerated product development**
  with real-time collaboration across engineering
- **Established agile product development cycles**
  with modern CAD tools
- **Enabled iterative workflows**
  with built-in branching & merging and version control
- **Reduced infrastructure costs and simplified onboarding**
  for a fast-growing startup

"Onshape makes it very easy and very flexible to quickly scale up. The collaboration is much easier, and different users can work on different parts of the same design simultaneously without friction."

– **Moshe Baum**, *Co-Founder and CTO, Wild West Systems*

Onshape Government Keeps Aerospace Hardware Development On Track & Compliant at Wild West Systems

Real-time collaboration, agile design workflows, and built-in compliance help them move quickly and iterate with confidence.



A Wild West Systems drone, designed entirely in cloud-native Onshape CAD+PDM. Onshape Government's built-in compliance tools keep their regulated data secure without sacrificing speed or innovation.

Onshape Government's built-in compliance keeps regulated data secure with less hassle

For companies developing regulated products, compliance requirements can introduce significant operational complexity. Teams must maintain control over sensitive technical data, ensuring they meet regulations like the International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR). Traditionally, that has meant investing in specialized infrastructure, managing complex workflows, and conducting extensive audits to verify compliance.

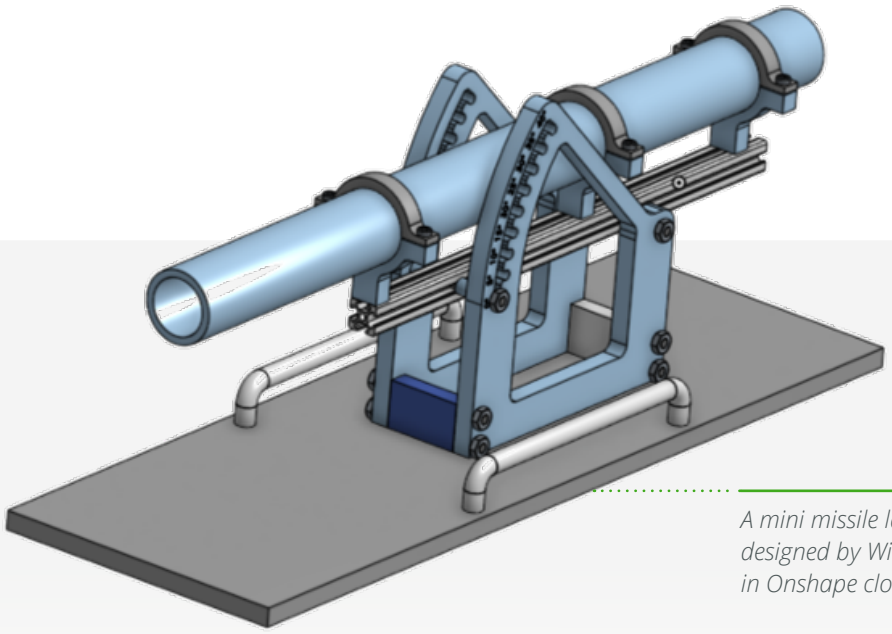
Wild West Systems wanted a different approach. The startup needed the speed and flexibility of Onshape's modern CAD tools without creating additional compliance burdens for its engineers.

Built specifically for regulated organizations, Onshape Government runs on AWS GovCloud and is designed to help teams meet ITAR and EAR compliance requirements. Rather than assembling multiple systems or creating custom processes to support regulated development, Wild West Systems can focus on designing, prototyping, and testing products within an environment purpose-built for compliance.

"Operating in a regulated environment, you obviously need to be much more diligent about your information, where it goes, and who it is shared with," Baum says. "So knowing that your CAD system and tools are built with this compliance makes it much easier. It's one less thing to think about."

Onshape Government's real-time performance and security analytics help Wild West Systems manage its regulated technical data with far less hassle than traditional design platforms. That allows them to move quickly without sacrificing compliance or innovation.

"As we make different iterations, we test a lot," Baum says. "If you don't have good control on versions, it would be impossible to keep control on what you're doing."



A mini missile launcher test fixture, designed by Wild West Systems in Onshape cloud-native CAD.

With Onshape Government providing built-in traceability, version control, and a cloud-native architecture designed to support regulated development, Wild West Systems can maintain startup speed while operating within aerospace industry compliance requirements.

Real-time collaboration enables cross-disciplinary design workflows

At Wild West Systems, engineering decisions happen quickly as product designs evolve continuously.

“Designs change literally every day, sometimes multiple times a day,” says Garret Oliekan, Lead Propulsion Engineer. “We’re building, and testing, and learning from those tests and then redesigning.”

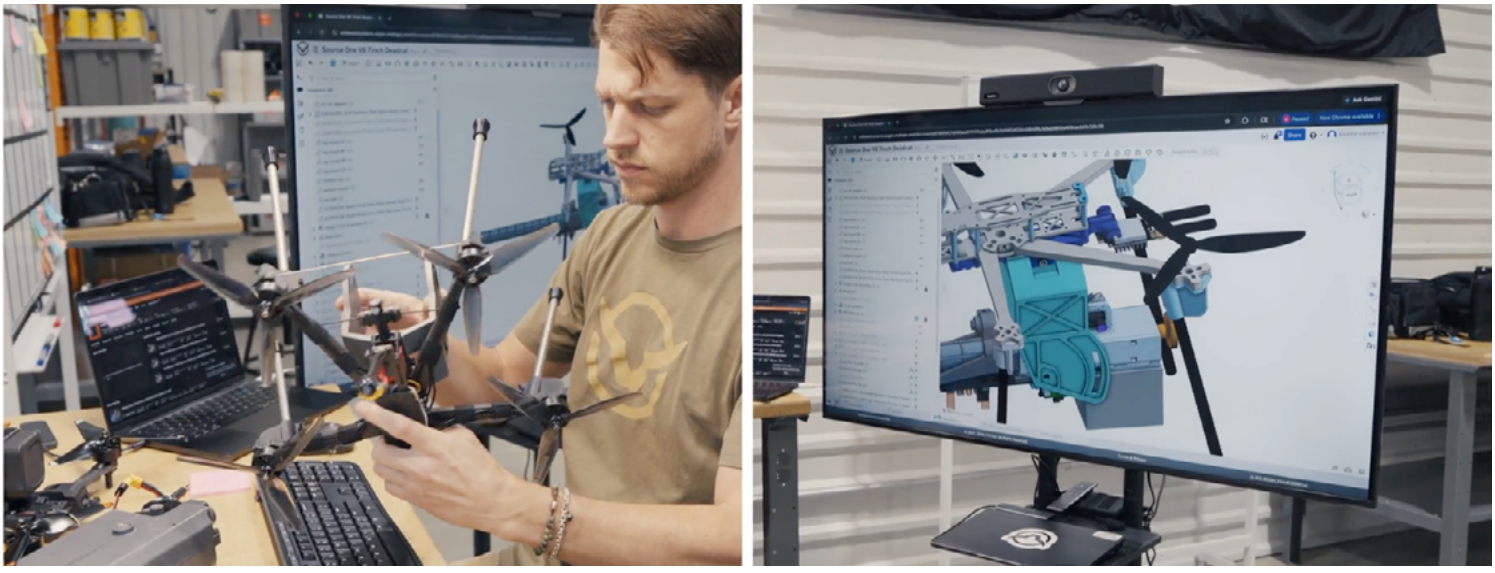
To support that pace, engineers collaborate directly inside the Onshape environment, where everyone works from the same source of truth.

“The live environment allows us all to work on it in tandem,” says Andrew Gardner, Senior Mechanical Engineer. “I can tackle one side of the design while somebody else is tackling the opposite end, and we can kind of meet in the middle.”

Onshape’s real-time collaboration capabilities extend beyond engineering. Manufacturing personnel, machinists, and other stakeholders can access the most up-to-date design information without waiting for files to be exported, shared, or updated.

“I think the main benefit is speed,” Gardner says. “You can provide feedback sooner rather than later. It keeps everybody in sync.”

As a result, their relatively small engineering organization can move with the coordination typically associated with more established teams.



Senior Mechanical Engineer Andrew Gardner uses Onshape’s real-time collaboration tools to iterate and modify Wild West Systems’ designs.

Cloud-native CAD tools help develop, test, and refine new ideas with confidence

Wild West Systems' fast-paced product development process is a constant cycle of design, prototyping, testing, and refinement. New projects begin with requirements discussions and rough CAD concepts. Physical prototypes are then produced using in-house additive manufacturing and machining capabilities. On-site testing immediately informs the next design iteration.

"I'm never at my desk for very long," Gardner says. "I'm running prints, taking them off, cleaning them up, checking assembly fit, going back to the computer, tweaking things, and then reprinting. It's an iterative loop."

As designs move from concept to prototype, engineers rely on a variety of Onshape's professional-grade 3D CAD tools to quickly develop, test, and refine new ideas.

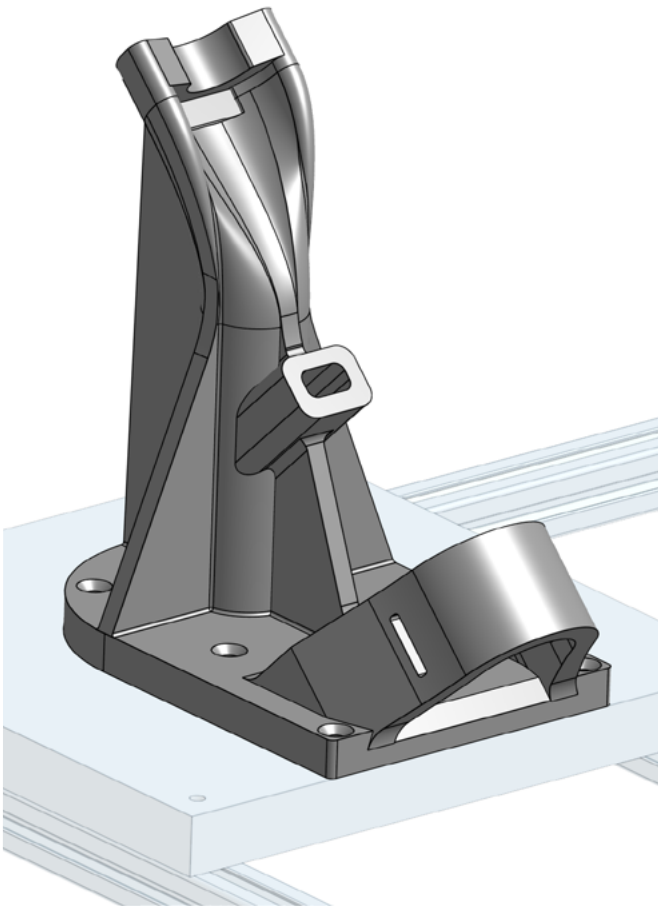
"I find Onshape especially useful in that early-to-mid stage of design," Gardner says. "It lets everybody work in tandem and collaborate really effectively."

The team uses Onshape's core modeling capabilities extensively for concept development, assembly design, and prototyping. For fixture design and test equipment, Gardner frequently relies on Onshape Frames to rapidly create structural assemblies.

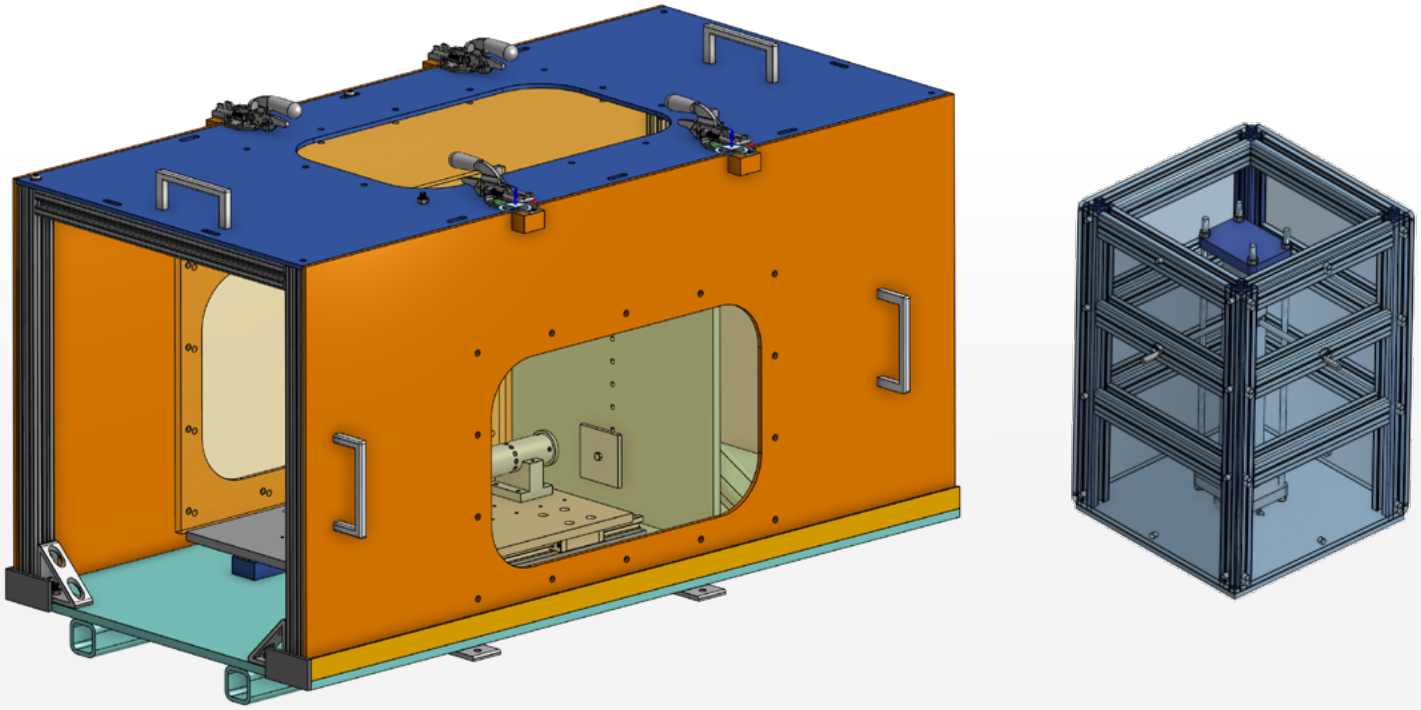
"When we're doing test fixtures or assemblies, it's really easy to sketch some lines and use the Frame tool," he explains. "Having all those profiles natively in Onshape is really nice."

Drawings are another important part of the workflow, particularly as projects move toward manufacturing. Because drawings remain associated with the underlying CAD model, engineers can quickly update documentation as designs change.

"If you make an update in the CAD, it's really easy to update your drawing, click refresh, and have everything back up to date," Gardner explains.



A drone tether test fixture, designed to test Wild West Systems' drone functionality, in Onshape.



Various rocket component test chambers, designed in Onshape cloud-native CAD by Wild West Systems.

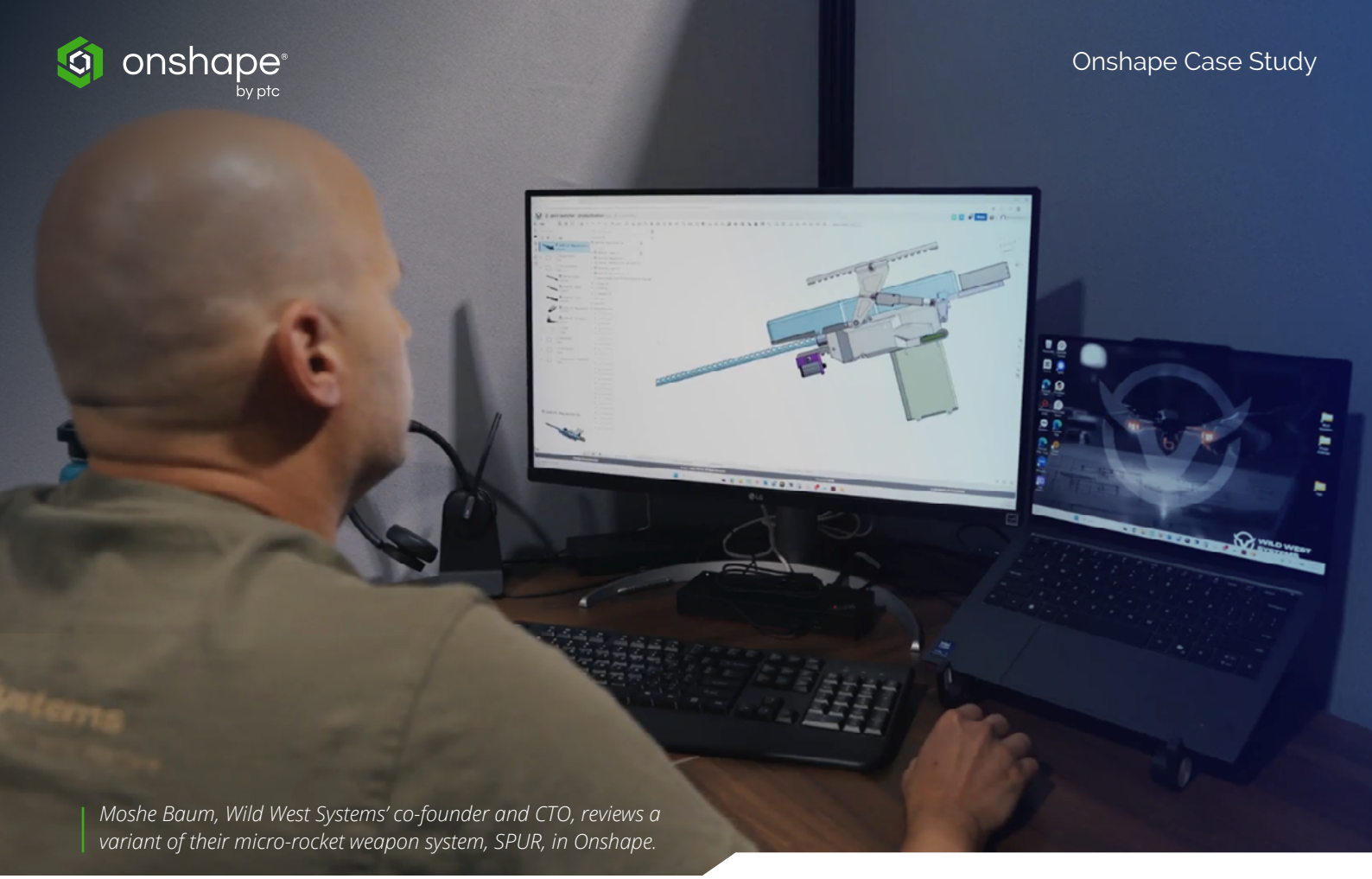
The team also uses Onshape Simulation to validate concepts before investing time and resources into manufacturing and testing. Running simulations early in the design process helps them evaluate structural performance, identify potential weaknesses, and gain confidence in designs before committing to production.

"The simulation tool helps validate your expectations on how a part is going to perform," Gardner says. "It gives you more confidence before you send it to a printer or machinist."

They also take advantage of some of Onshape's Custom Features. The Thread Creator tool helps engineers create functional printed threads directly within their Onshape models, accelerating prototype development and reducing manual work.

"It's extremely useful for when you're going to be printing parts; it lets you cut the threads directly on the part and have it actually modeled fully in 3D," Gardner says. "So you can send it straight to a printer and be able to thread the parts together. Otherwise, I might be doing that in the slicer program and not have as much control over it."

Together, these core Onshape capabilities allow Wild West Systems to maintain a highly iterative development process where ideas can be tested, refined, and validated quickly, moving from concept to prototype faster while maintaining confidence in every revision.



Moshe Baum, Wild West Systems' co-founder and CTO, reviews a variant of their micro-rocket weapon system, SPUR, in Onshape.

Rapid concept-to-prototype cycles supported by built-in PDM

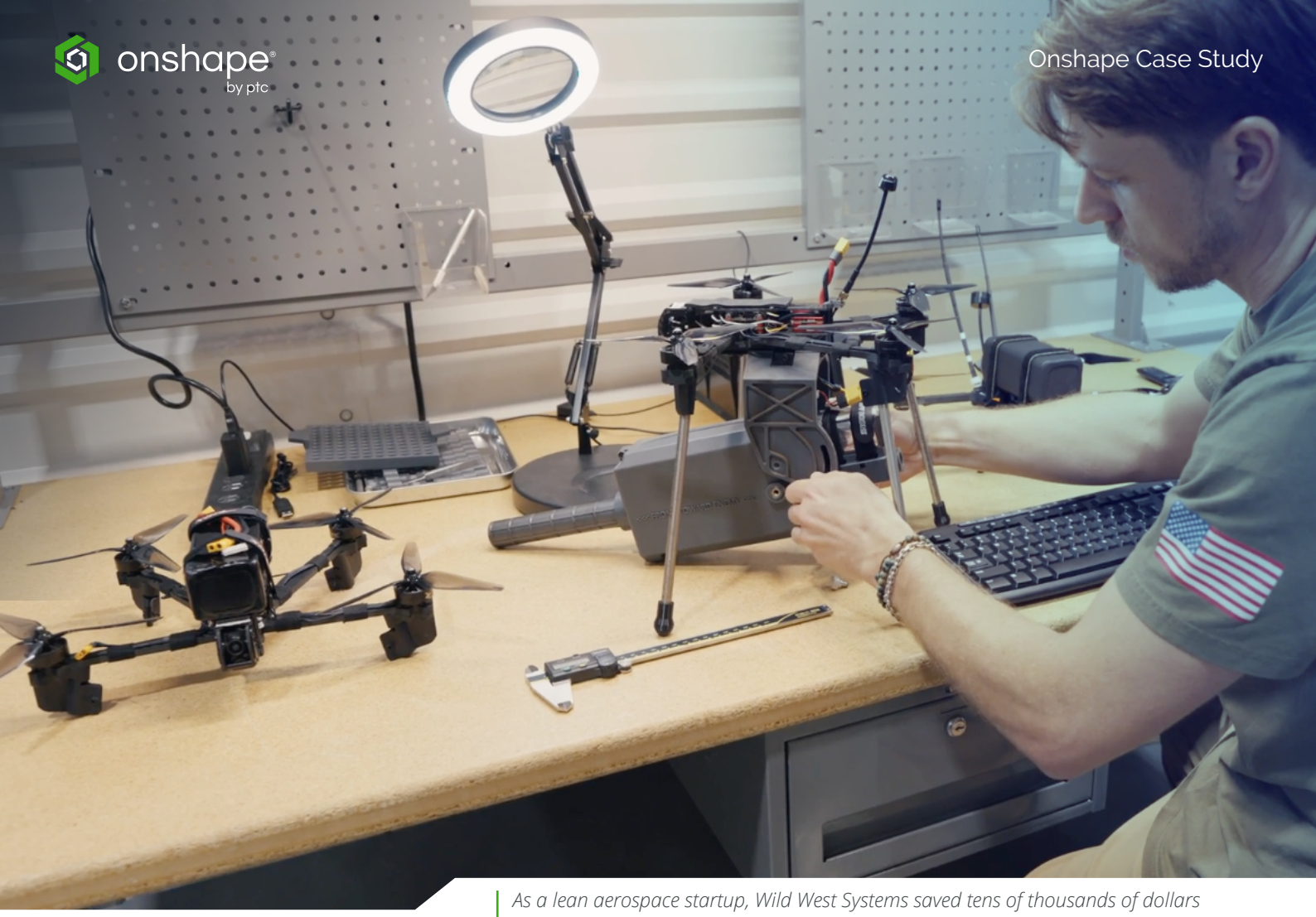
Onshape's built-in product data management (PDM) tools like branching and merging play a critical role in supporting Wild West Systems' agile workflows. Engineers can explore new ideas independently while keeping released designs safe.

"I might take a stable design and branch off of it and start tweaking things without affecting something we've already got a stable design for," Gardner explains. "If you end up having a breakthrough with that branch, you can easily merge it back into the main branch."

That iterative pace can be significant. During development of a propulsion molding fixture, Wild West Systems completed more than 75 design iterations in less than two months as engineers refined manufacturability, material behavior, and performance characteristics.

"One of the best things Onshape does for iterative design is how easy it is to track version control and not have to worry about messing up assemblies," Oliekan says. "You can always go back to a previous version."

By combining real-time collaboration with Onshape's built-in PDM, Wild West Systems has created an agile product development process capable of moving from concept to prototype in days rather than weeks.



As a lean aerospace startup, Wild West Systems saved tens of thousands of dollars and months of implementation time with Onshape's browser-based CAD platform.

Cloud-native CAD helps the business scale while keeping overhead low

For a growing startup, every investment must support product development and business growth. By adopting Onshape from the beginning, Wild West Systems avoided many of the infrastructure costs and licensing hurdles traditionally associated with engineering software deployments.

"I can work from a Mac and just log into Onshape and work from wherever," Baum says.

Baum estimates that eliminating lengthy software downloads and avoiding upfront investments in dedicated CAD workstations and supporting infrastructure saved the company tens of thousands of dollars and several months of implementation time during its early growth stage.

"Onshape was a natural go-to platform when we started," he says. "You don't want to spend too much time setting up servers or setting up security."

Onshape has also helped streamline onboarding as the company expands.

"When new people are coming on board, it's very easy for them to get a grasp on how to navigate Onshape," Gardner says. "And when we do have stakeholders checking in and seeing where things are at, it's easy for them to navigate as well."

That combination of accessibility, flexibility, and ease of adoption allows Wild West Systems to scale its engineering team as needed without introducing unnecessary overhead complexity.

Setting the standard for modern, compliant aerospace development

Wild West Systems proves that lean engineering teams can still move quickly in a highly regulated industry without sacrificing collaboration, traceability, or security.

By combining Onshape Government's cloud-native architecture with an agile, highly iterative development process, they have created a modern engineering workflow that connects design, prototyping, testing, and manufacturing in a single, compliant environment.

"Onshape makes it very easy and very flexible to quickly scale up," Baum says. "The collaboration is much easier, and different users can work on different parts of the same design simultaneously without friction."