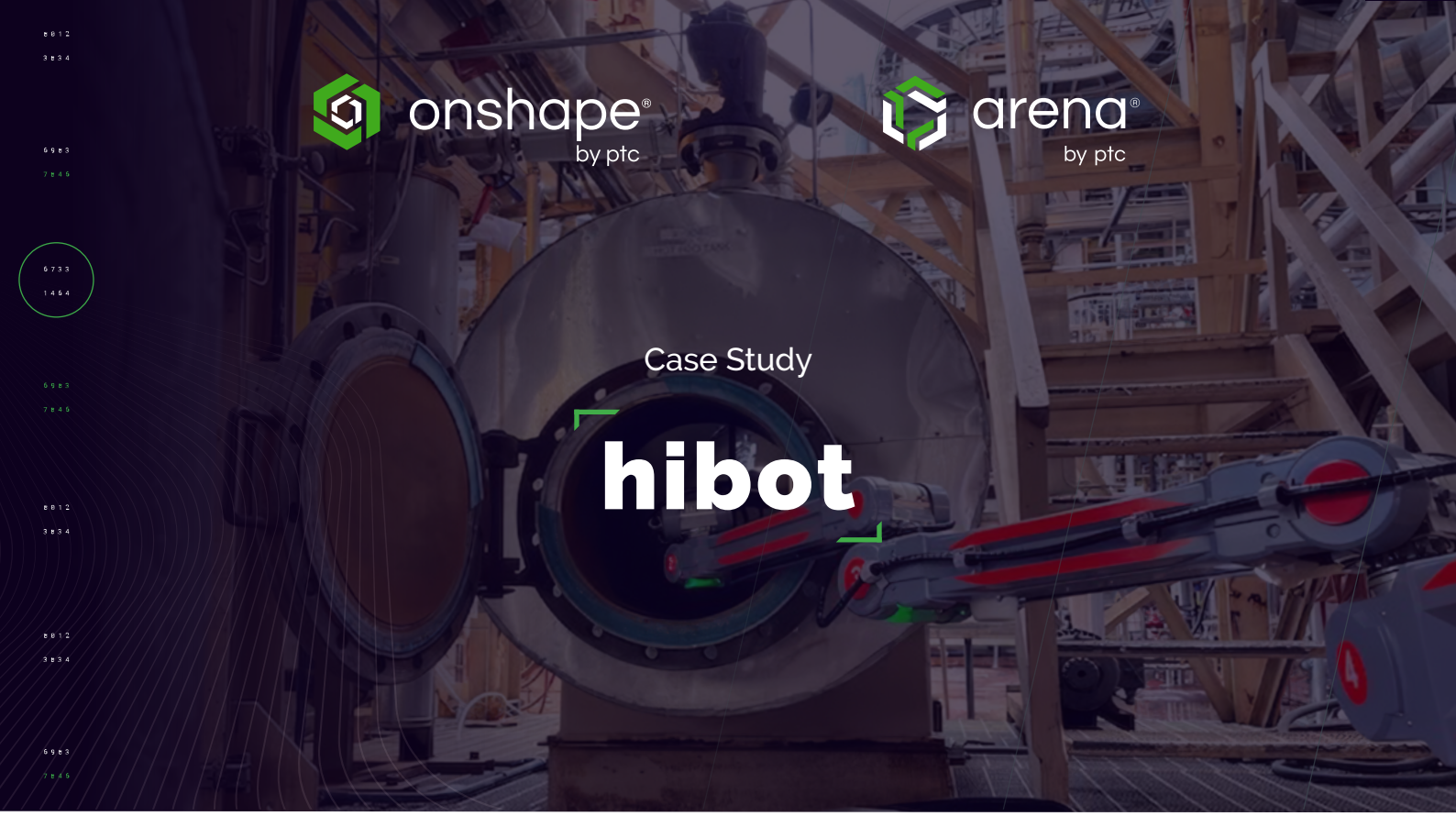


hibot

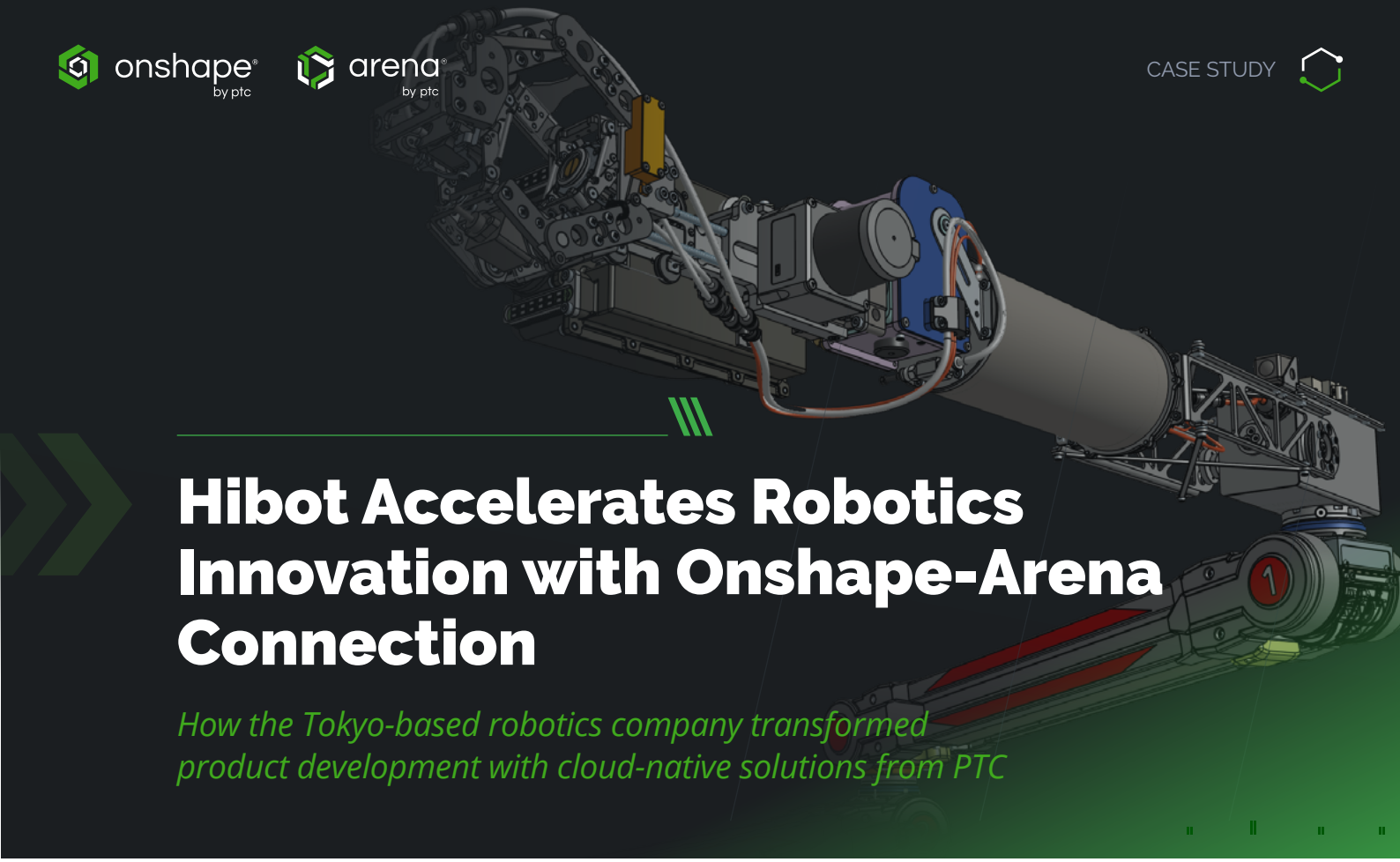
INDUSTRY: ROBOTICS

About the Company

hibot Corp. is pushing the boundaries of inspection robotics by designing sophisticated machines that reduce human risk in dangerous environments, such as nuclear waste areas and aircraft fuel compartments. Originally part of the Tokyo Institute of Technology (now Institute of Science Tokyo), the company spent years researching advanced locomotion systems. Its team has tackled unique challenges, including developing robots to explore the Fukushima nuclear reactor after the 2011 disaster.

Today, hibot is in full commercialization mode, building long-reach robotic arms for high-risk industrial inspection. With complex hardware, global suppliers, and fast iteration cycles, the company needed a product development ecosystem built for agility, collaboration, and scalability.

To support its transition from a research lab to a manufacturing operation, hibot adopted PTC's Onshape-Arena Connection, enabling instant sharing of product information between cloud-native CAD and PLM systems with a click of a button. While Onshape drives hibot's collaborative design and distributed engineering workflows, Arena anchors the company's product record as well as change management and development processes.



Hibot Accelerates Robotics Innovation with Onshape-Arena Connection

How the Tokyo-based robotics company transformed product development with cloud-native solutions from PTC

Scaling up: From research lab to commercial manufacturer

When Peter Sommer joined hibot as Head of Product Manufacturing, the team was using a file-based CAD paired with an on-premises PLM installation; a setup that had served them well in the past but wasn't equipped to handle the growing demands of a global operation.

"As we transitioned from a research team into a commercial operation, we needed tools that could scale with our ambitions. We knew the technology we had chosen for our research phase wasn't going to get us where we needed to go," Sommer explains.

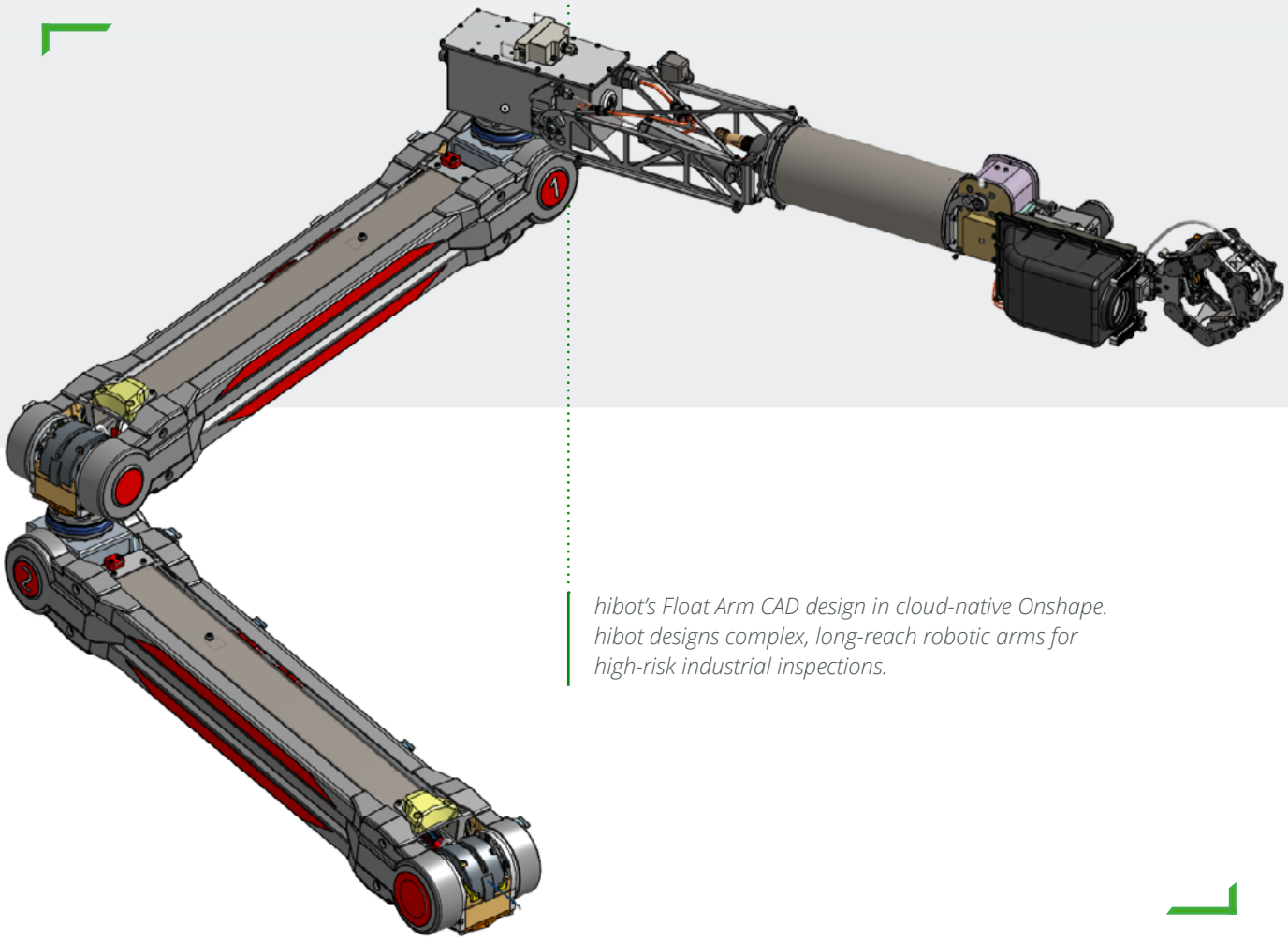
Hibot was using Google Drive for product information management, which created version control challenges. Furthermore, the engineering team only used a small fraction of their existing CAD software's capabilities, struggling with a steep learning curve and inconsistent design processes.

"As our robots grew more complex, we needed a single source of truth to ensure every part, revision, and supplier interaction was fully controlled. Our robots represent a significant financial investment, and we need absolute confidence that the right information is reaching the right people. There's very little room for ordering the wrong parts," explains Sommer.

It was clear that hibot needed a more powerful, purpose-built platform that could support consistent design practices and scale with their commercial ambitions.

onshape® by ptc

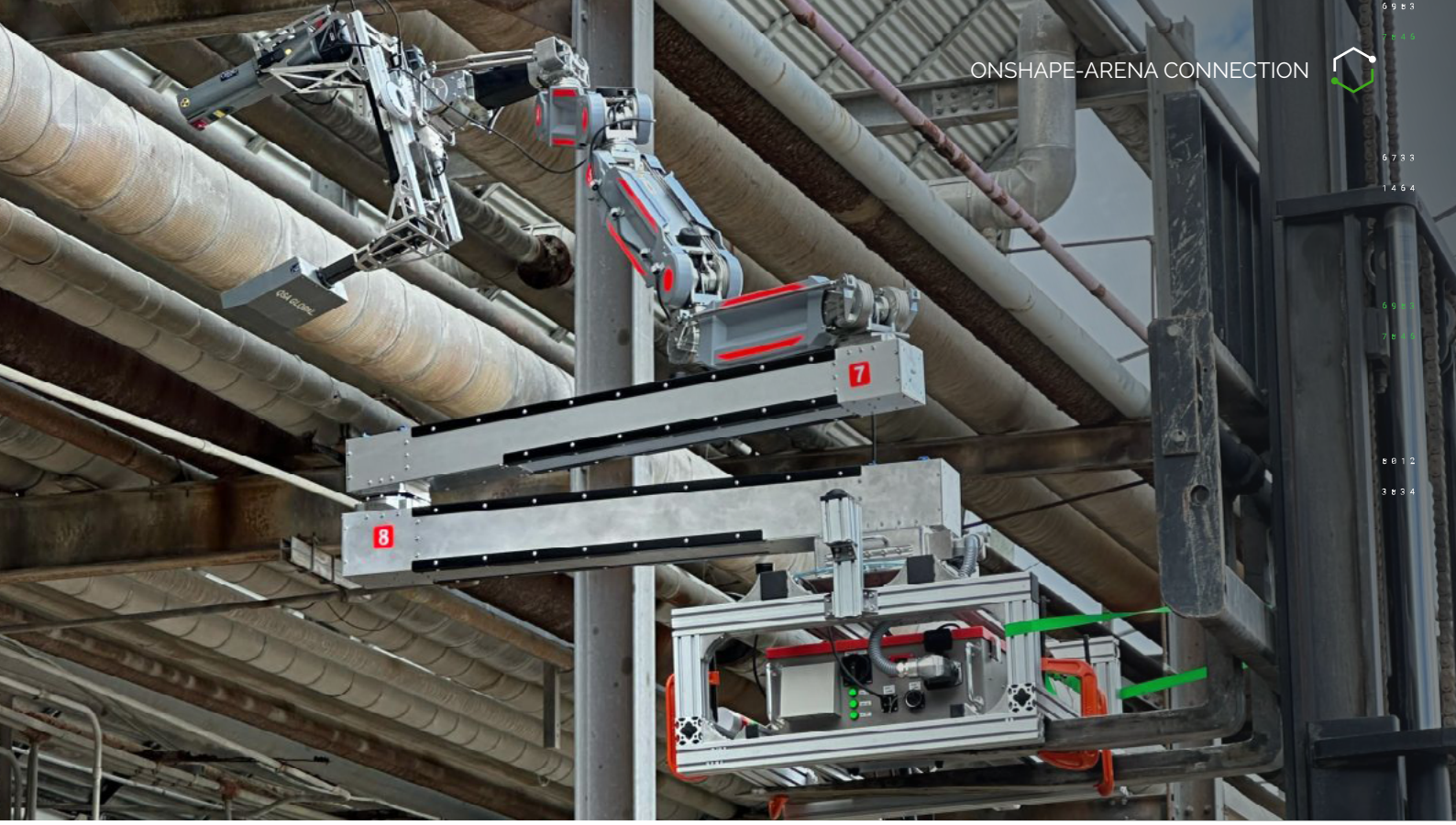
A platform for agile design at scale



hibot's Float Arm CAD design in cloud-native Onshape. hibot designs complex, long-reach robotic arms for high-risk industrial inspections.

Having previously implemented Onshape at another company, Sommer knew it offered the speed, simplicity, and accessibility his team needed. The transition required some change management, but the benefits outweighed those concerns.

"With Onshape, the learning curve is almost flat," Sommer says. "New engineers are productive in just a few days. And seasoned team members love the ability to time travel. To go back, roll revisions, or merge features without fear of losing work."



hibot's float arm performing CUI (Corrosion Under Insulation) inspections, a dangerous threat to thermal insulation systems. hibot used Onshape's custom features to model the float arm's high-density wire harnesses.

Engineering at the speed of software

With Onshape's built-in product data management (PDM) like version control and branching and merging, hibot's mechanical engineers now work more like software developers. They can experiment safely, merge ideas with confidence, and resolve changes with minimal disruption — something that was nearly impossible in their legacy CAD system.

"Our engineers are even asking our software team for branching strategies," Sommer notes. "They're speaking the same language now."

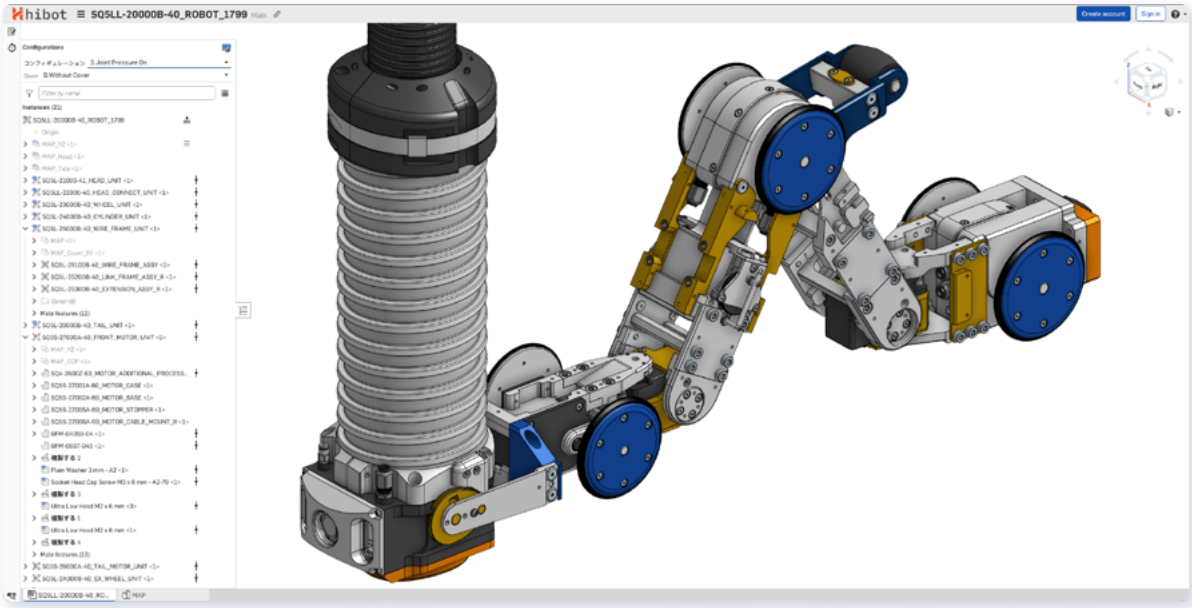
The team also uses custom features for wire routing to model complex wire harnesses crucial to hibot's high-density robot designs. These models are linked to the electrical bill of materials (BOM) in Arena, helping external assembly teams understand intricate layouts.

> *"Some of our systems can reach as many as 16,000 parts. With Onshape, we don't worry about hardware performance. We just open the model and get to work."*
>
> **Peter Sommer**, *Head of Product Manufacturing, hibot*

One platform, global collaboration

As a cloud-native CAD+PDM system, Onshape helped solved one of hibot's biggest business needs: distributed manufacturing. Hibot's robots are built where they're sold: Italy for European customers, in the U.S. for North America, and so on. That means real-time global collaboration is a must.

"Instead of exporting files or managing backups, we just log in and design together in real time," Sommer says. "We use the 'follow' feature during review meetings to walk through designs. It's seamless."



hibot's SQUID Industrial Boiler Inspection System, designed in Onshape CAD+PDM.

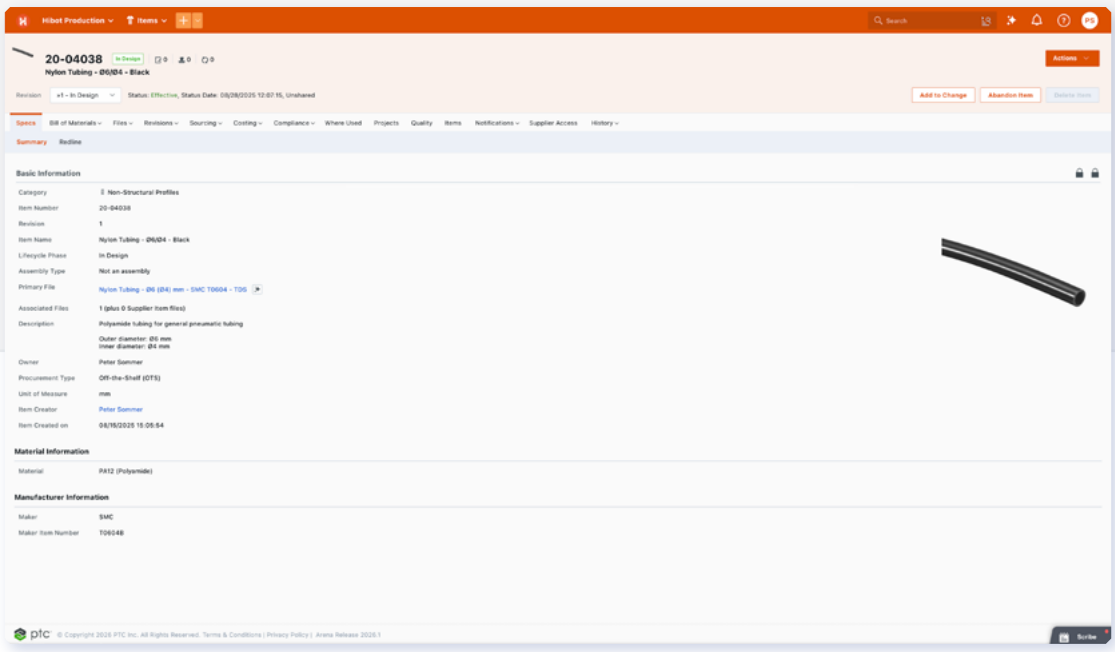
For example, hibot's contractors in Germany work directly in Onshape as guest users, eliminating file transfers, version confusion, and unnecessary downtime and rework.

"When we collaborate with partners, we don't have to waste 200 hours cleaning up CAD files or reattaching metadata," Sommer continues. "They work in our system, we push the design to Arena, and we're done. That kind of efficiency just wasn't possible before."

hibot's SQUID robot provides a safer alternative to human-led boiler and coil inspections. Their robots reduce human risk in dangerous environments.

arena® by ptc

Turning information chaos into clarity



Arena PLM detailed item view with links to associated documentation and revisions.

With Arena now serving as hibot's single source of truth, all product information is revision-controlled and up to date. The connection with Onshape ensures faster, more accurate communications between engineering and downstream teams.

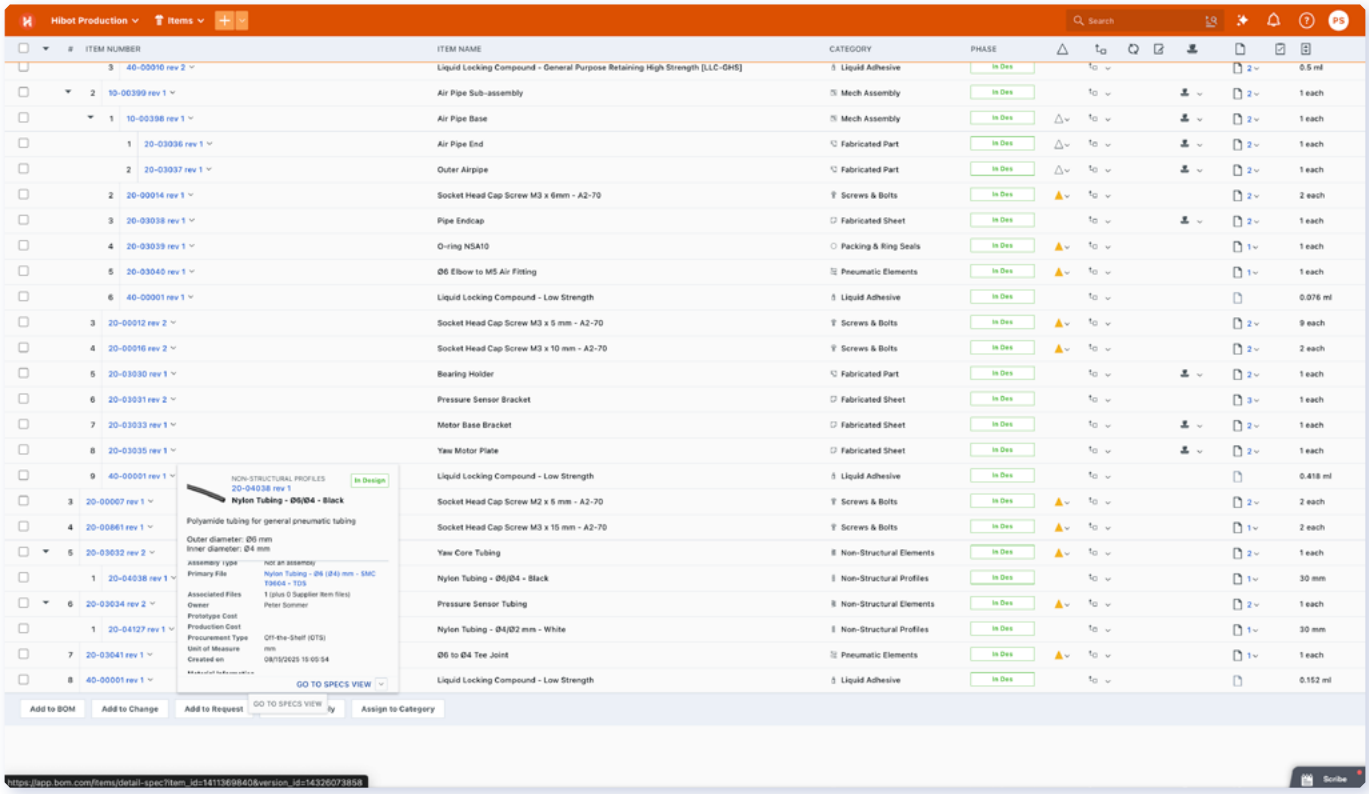
"If it's not Arena, it doesn't exist."

Peter Sommer, *Head of Product Manufacturing, hibot*

Support for complex product configurations

Each robot that hibot designs is unique. Hence, multiple BOM configurations are maintained in Arena. The team also manages firmware as items, allowing for greater traceability of software artifacts alongside hardware components. Using Arena's robust BOM management capabilities, hibot can:

- **Readily track retrofits and post-production changes**
- **Ensure the correct firmware is installed on robots**
- **Provide reliable field service and maintenance through up-to-date product configurations**
- **Quickly troubleshoot firmware and hardware integration issues**



Arena PLM multi-level BOM view with item details, categories, and phases.

Enhanced supply chain collaboration

Arena's secure, cloud-native platform empowers hibot's downstream product teams and global partners to proactively engage in product development activities.

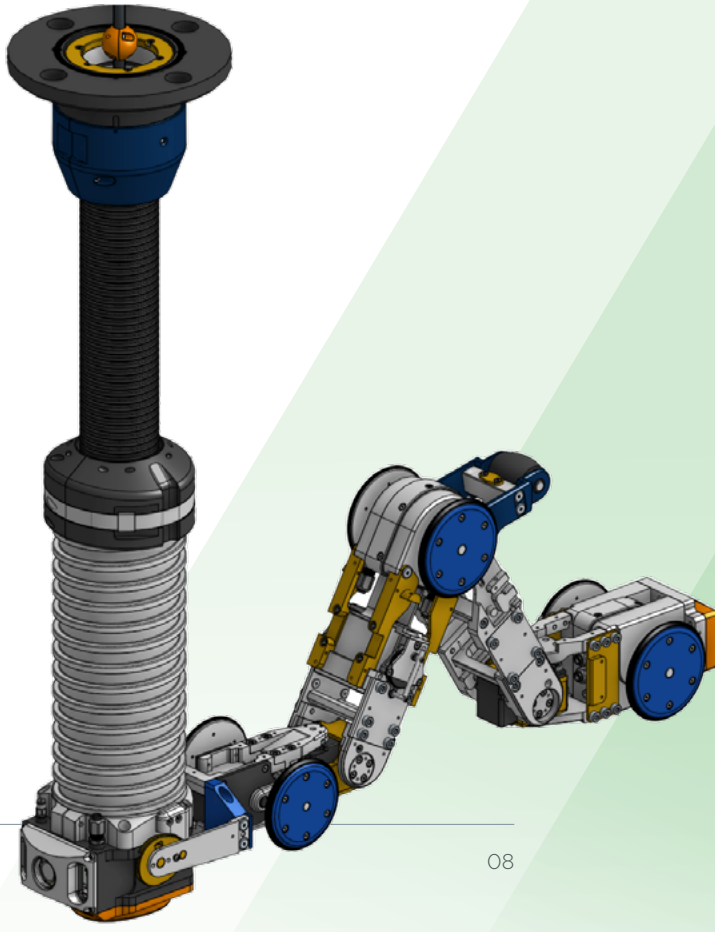
"We can have a new supplier up and running in five minutes within Arena," noted Sommer.

Tier 1 and Tier 2 suppliers along with the operations team report nonconformances directly in Arena. These reports are routed to the person(s) responsible for the design. During robot assembly, a production team member assumes ownership of the BOM. Upon completing the assembly, they transfer ownership to an operations team member.

Overall, the shift to Arena has enabled hibot to:

- **Use only approved drawings and BOMs in production**
- **Establish clear ownership and traceability for all parts and assemblies**
- **Reduce costly manufacturing errors and product delays**
- **Increase team productivity**

"The machines we build are extremely complex," stated Sommer. "Many of our components are unique, requiring us to communicate with suppliers that are far down the supply chain. Arena addresses the problem of how we communicate information and how we agree on what information we're using."



Another view of hibot's SQUID Industrial Boiler Inspection System in Onshape.

Onshape and Arena:
A foundation for scalable, modern manufacturing

Thanks to the Onshape-Arena Connection, hibot now operates with the agility of a startup and the confidence of a world-class manufacturer, without needing large IT infrastructure. By creating a unified, cloud-native ecosystem, hibot's teams can work efficiently, ensure product quality, and position themselves for future growth in the high-stakes world of industrial robotics.

> *"We've eliminated hidden costs associated with our outdated, on-premises systems. We don't wake up engineers in the middle of the night because the server crashed. We just build robots."*
>
> **Peter Sommer**, *Head of Product Manufacturing, hibot*

Learn more about Onshape-Arena Connection

LEARN MORE >

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