

GET THE VIRTUAL TWIN WORKING FOR YOU

The Virtual Twin as a Service (VTaaS) introduces new possibilities for optimizing production lines, designing facilities, and refining field operations with precision and flexibility. **This Q&A document** provides a detailed glimpse into the scope, adaptability, and practical uses of VTaaS, but there's much more to discover. To further understand how VTaaS can help improve operations and elevate your business, we encourage you to watch the **Get the Virtual Twin Working for You** webinar. This educational session presents valuable insights into applying VTaaS in complex setups, combining it with existing tools, and leveraging data-driven simulations to find solutions and address challenges. It's a practical resource to learn how to take full advantage of this cutting-edge technology, helping your organization stay competitive.

Q: Are there any limitations on the size and complexity of the production line you create and validate with Virtual Twin as a service?

A: There is no limitation to the size and complexity of the line we can validate with the virtual twin. In one of our recent Virtual Twin as a Service (VTaaS) implementations, we created a virtual twin of a production line with over 200 stations and multiple types of equipment. We can address very large, complex environments with VTaaS.

Q: If my organization already uses specific simulation or analytics tools, can Virtual Twin as a Service (VTaaS) adapt to or complement those without requiring a complete overhaul?

A: We can ingest models and processes from other tools, but all of the VTaaS solutions are done on our own private cloud with our tools. So, we can input information from other tools, but the resulting virtual twin is built on our 3DEXPERIENCE platform.

Q: Could you explain how a virtual twin can be utilized in field service operations and the aftermarket?

A: We support SBOMs (Service BOMs), EBOMs (Engineering BOMs), and MBOMs (Manufacturing BOMs), so we can create a virtual twin of your product in the field and the processes required for maintenance and field service operations.

Q: Does your virtual twin solution have the ability to establish the current reality point for the 3DEXPERIENCE cloud platform model?

A: We can provide a service to scan your current plant or production line and create a point cloud for the 3D model. Our solution has the full capacity to then exploit that data.

Q: Does your virtual twin solution have the ability to model improvements? (Does your customer need to have a CAD model of the new layout?)

A: Yes, we can model improvements. In fact, we can model several different improvements and compare them based on your KPIs to determine which improvement best meets your goals. While a CAD model of the new layout is helpful, if you don't have one, we can create one as part of the VTaaS process.

Q: How do you get the point cloud data as the start point?

A: We have a partner that has the hardware and software required to create the point cloud. They simply walk through your plant (or whatever environment you're working in) with their scanner and it creates the point cloud.

Q: Can you simulate multiple line interactions?

A: Yes, in fact, we can structure the model by dividing it into process groups that have a functional sense that can be connected together.

Q: If the customer does not use the UPS-based product structure but instead uses the traditional PLM-based solution for EBOM, Change Management and ePDM integration, does this have any dependencies on implementing a virtual twin?

A: No, we can use any of those models as a starting point for the virtual twin.

Q: I understand the optimization of existing plants. What about new plants? What is the complexity? Do you have a library of equipment?

A: We can do new plants as well as existing plants. In that scenario, we can start with the 2D diagrams of the new plant and build up from there. Yes, we have an extensive library of robots and other equipment that are spatially and functionally accurate.

Q: Can you (DELMIA) also incorporate unintended failure points (e.g., quality, accuracy, completeness) into the virtual digital twin and suggest optimization measures for their mitigation?

A: Yes, we can introduce all sorts of events in the simulation to recreate real working conditions. Then, through analysis, trade-offs can be made to find a suitable solution.

Q: How do you collect the data to generate and support the modeling? How does the output from your model correlate to real-life performance?

A: We collect data in any form needed to describe the process correctly. A simulation strategy must be defined either by searching for accurate simulation results compared to reality (which can sometimes take a very long time) or by working with relative results that can be projected to the actual state.

Q: What input is required to collect & feed in digital twin/virtual twin software?

A: Inputs can come from many sources, including, but not limited to, 2D and 3D models in nearly any format, external systems such as PLM, PDM, ERP, MES/MOM, IOT and IIOT devices, and nearly any type of shop floor equipment using multiple protocols. This is not an exhaustive list, but hopefully, it gives you a sense of our flexibility for building and maintaining the virtual twin.

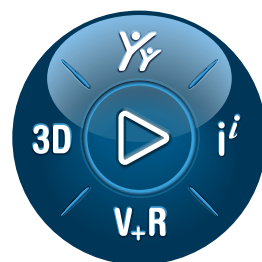
Q: How do you measure flow and detect restrictions or waste based on lean manufacturing principles?

A: All KPIs linked to flow are monitored (process time, waiting time, idle time) with tools to detect the critical path and bottlenecks. The simulations built into the virtual twin provide both visual queues (that is, you can see back-ups/restrictions on the simulation) and KPIs that identify where restrictions and waste are occurring in the model.

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