# Process Digital Twin for Pharma

## Engagement model

**To kick-start your digital twin and ensure fast delivery and early value to your business, Atos offers a business-focused and agile project approach that leverages ready-made applications and solution building blocks.**

Our approach to delivering your digital twin is collaborative, pragmatic and modular. From the discovery of new opportunities to implementation, we will work in partnership with you to propose and deliver the IoT & Analytics solutions and services most relevant to the stage of your digital transformation journey.

Atos and Siemens have been working with a large global pharmaceutical company to improve the production process of a vaccine and eliminate wastage of time and costly raw materials. We developed and implemented a process digital twin; this collects real-time data via in-line sensors at each stage of the production process and combines this with physical, chemical and biological models to create a live in-silica replica of the physical process. With the ability to simulate changes and optimize operations, the company has new insights to improve the development and control of the pharmaceutical manufacturing process. The digital twin has enabled the company to significantly improve product quality, make cost savings and achieve faster time to market

Atos

## A complete approach: from idea to implementation

To ensure an end-to-end consistency, Atos will provide all consulting, data-science, integration, infrastructure and security services necessary to build and run digital twin applications on the IoT platform.

### Discovery Workshop

To kick off your digital twin journey, a team of 4-5 industry and digitalization experts from Atos and our partners together with 5-6 of your experts will understand existing processes, associated challenges and data usage in a one/two-day digital twin discovery workshop. On-site and virtual workshop formats are available.

Together, we will identify how the process digital twin can optimize your production process by:

- Understanding the benefits for your R&D and manufacturing operations.
- Exploring existing processes, associated challenges and data available.
- Evaluating and prioritizing use-cases.
- Defining a roadmap and scope for the proof of value phase.

### Proof-of-Value

In order to prove the value to your business rapidly, we will develop a digital twin for selected processes in a limited timeframe. Based on agile methodologies we will validate the core business impact hypotheses. This will provide a comprehensive basis to ensure you quickly benefit from a full-scale application implementation. Our analysis focuses on the following aspects:

- **Prove technical feasibility** of the solution for selected processes by defining, prototyping and testing and ensuring your requirements, such as user experience, data and connectivity, and systems maturity and integration are fulfilled.
- **Prove financial viability** for selected processes through profitability calculations that establish a concrete business case based on the impact of the digital twin applications.
- **Deliver a convincing prototype** that can be used as a case study for further digitization of equipment and processes.
- **Establish a recommended road map** for the implementation phase.

### Implementation

In order to take the benefits of a successful proof-of-value phase to the rest of your business, we industrialize the solution, integrate it into your production environment and ensure Good Manufacturing Practice (GMP) validation.

To provide you with a complete and accurate picture of your environment, the digital twin solution includes secure connectivity to your devices and integrates production data with those from various management systems such as Management Execution Systems (MES), Laboratory Information Management Systems (LIMS) and Enterprise Resource Planning (ERP). You benefit from a rapid time to value thanks to Atos' pre-integrated IoT ecosystem which enables fast implementation of use cases from pilot to roll-out and an agile innovation approach that ensures we stay closely focused on the value that's added to your manufacturing processes.

To ensure the solution delivers business value at scale to pharmaceutical operations, Atos can also deliver a comprehensive managed service with clear service levels based on business-oriented and jointly agreed KPIs. Details can be provided on request.

# Codex IoT Services

To learn more about the solution or contact an expert, visit atos.net/iot or email dialogue@atos.net