b.telligent
smart data. smart decisions.

Scalable AI Inference for Manufacturing

Nordex standardizes visual quality inspections worldwide with Azure Machine Learning

NORDEX

Project at a Glance

Nordex, one of the world's leading manufacturers of wind turbines, previously conducted visual inspections of key components—such as nuts, cable harnesses and fittings—during nacelle assembly. The goal was to introduce a unified, scalable image inference standard that increases inspection coverage and documentation quality across all global sites. b.telligent developed a modern Azure ML–based cloud inference architecture.

Germany, Manufacturing

Enterprise

3 Months

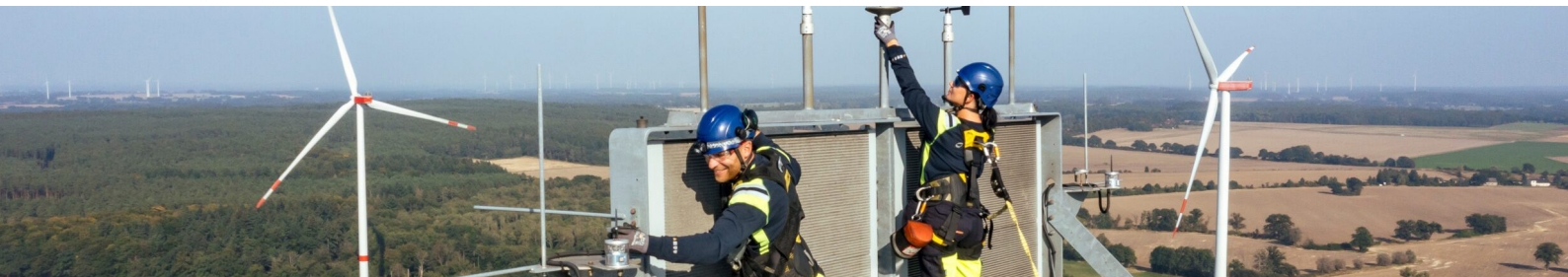
Azure Machine Learning ONNX RUNTIME

Highlights

- **Standardized Quality Checks:** Unified image inference across all global manufacturing sites.
- **Scalable Cloud Inference:** Azure ML ensures low latency and flexible expansion at any scale.
- **Cost-efficient deployment:** Azure ML Endpoints simplify deployment and speed up development.

Challenge

Visual inspections in nacelle assembly were inconsistent and depended on manual processes. Detecting features such as nuts or cable bundles lacked a reproducible, scalable method to increase inspection depth and documentation quality globally. At the same time, management required reliable estimates for development and operating costs as well as potential savings through improved defect detection.



Thanks to the professional execution of the pilot project by b.telligent, we were able to successfully validate the functionality of a previously developed AI model in the Microsoft Azure cloud.

We were particularly impressed by the team's technical expertise, transparent collaboration, and fast implementation. The results provide a solid and reliable foundation for the next steps toward AI-supported quality inspection.

Stefan Tietze
Head of Technology Quality Management at Nordex Energy SE & Co. KG

Solution

b.telligent analyzed the existing AI setup, optimized models and introduced a benchmarking method for high-resolution production images.

The MVP runs on Azure Machine Learning using Managed Online Endpoints for fast iterations and low latency.

A future-ready AKS-based architecture enables elastic scaling and cost optimization. A full MLOps framework with telemetry, drift detection and release governance completes the solution.

Success

Nordex now benefits from fast, stable and scalable image inference capable of detecting even small features such as nuts or cable bundles. The cloud architecture significantly reduces CAPEX and OPEX compared to on-premises setups while supporting flexible global expansion.

Azure ML accelerates development cycles and lowers operational complexity. With automated scaling, clear governance and standardized inspection processes, Nordex achieves higher process reliability, lower quality costs and a globally consistent quality standard.

Looking for Support With Your Data Challenges?

Contact us for a first, non-binding consultation.

Sebastian Amtage, Founder and Managing Director
hello@btelligent.com

Curious To Learn More?

Discover the full success story — right here.

Click for the details

b.telligent

b.telligent is a technology-independent consultancy specializing in optimizing digital and data-driven business processes, as well as customer and supplier relationships. More than 400 employees work across nine locations in Germany, Austria, Romania, and Switzerland, serving over 500 clients.