

# 4000 wind turbines inspected for Vestas in Europe

## Reference Case: Vestas NCE and EEA wind turbine blade inspections

Vestas was looking for a company to carry out the blade inspections on 4000 wind turbines across fifteen countries in northern and eastern Europe. For the third year running, they opted for Sulzer Schmid's drone-based solution. This allowed them to meet the high-quality standards and time constraints for this project.

## The Challenge

End of 2020, Vestas approached Sulzer Schmid, a leader in delivering drone-based inspections. Having successfully led two campaigns for Vestas NCE in Scandinavia the two previous years, Sulzer Schmid with their artificial intelligence (AI) and data processing software were well prepared for the task. Starting in March 2021, the campaign required swift mobilization and training of multiple certified inspection teams. Additional challenges such as Covid-19 related logistic barriers, quarantine and poor weather conditions added to its complexity.

## The Solution

Sulzer Schmid carried out the inspections utilizing its 3DX™ Blade Platform which deploys autonomous Unmanned Aerial Vehicles (UAVs) to inspect wind turbine blades. Inspections were carried

out either directly by Sulzer Schmid or by experienced service providers Fairwind, Farowind and ROBUR, who were trained by Sulzer Schmid. A total of 19 teams were involved in the inspection campaign with an average of thirteen teams performing simultaneous inspections across the countries.

Central project management with detailed planning and overview of all ongoing inspections 24/7 was provided by Sulzer Schmid.

During the inspections, high-resolution images and sensory data were captured by the UAV payload and transferred to the 3DX™ Blade Platform. The state-of-the-art software employs artificial intelligence during a pre-annotation step and Blade Experts are then able to work on the data and deliver reports to Vestas on a continuous basis. Vestas could access the live inspection data from anywhere via mobile devices and the 3DX™ BladeStation Online gave them full transparency at all times.

## The Benefits

By tasking Sulzer Schmid to carry out the inspections, Vestas had one point of contact throughout this large-scale project. With 17 different wind turbine types and sometimes very remote locations, Sulzer Schmid managed to inspect up to 18 turbines per system and day.

The AI driven data and exploration part of the 3DX™ Blade Platform can handle several hundred thousand annotations per customer while facilitating the work of the Blade Experts. The compressed data is stored centrally and can be filtered for multiple usage.

In addition, data captured in the 2019 and 2020 campaigns could be used to track the state of the blades over time and ensure their integrity. Vestas is now in a position in which they can utilize data over time to optimize and plan repair activities in this region.





With complete dedication, flexibility, and agility Sulzer Schmid managed to mobilize inspection crews and help our engineers deliver very good reports with reliable, high-quality data within the given time-frame.”

*Peter Vass, Regional Service Sales Specialist, Vestas Northern - Central Europe*



We are very impressed with the 3DX™ Blade Platform. It helps us analyze and determine if repairs are necessary and it gives us full transparency at all times. By accessing real time information with mobile devices, we are able to answer questions from management and customers at any given time – all in all an outstanding user experience.”

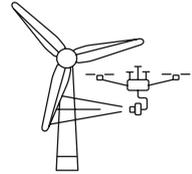
*Lean Frandsen, Technical Planner, Special Task Nordic, Vestas Northern – Central Europe*

	2019	2020	2021
Countries	2	4	15
Inspected turbines	1,179	1,501	4,000
Inspected turbine types	7	11	17
Number of inspection teams	5	11	19
Downtime per WTG	60 min	45 min	30 min
WTG inspections per day	up to 11	up to 13	up to 18
Largest rotor diameter	136 m	150 m	162 m

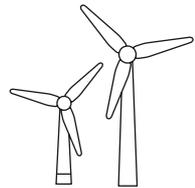
**15**  
COUNTRIES



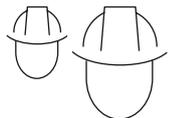
**4000**  
WIND TURBINES



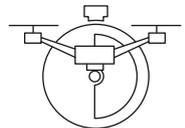
**17**  
TURBINE TYPES



**19**  
TEAMS



**30** MIN  
DOWNTIME/WTG



UP TO  
**18**  
INSPECTIONS  
PER PILOT/DAY



## About Sulzer & Schmid Laboratories AG

Founded in 2016 by Tom Sulzer and Christof Schmid, Zurich-based Sulzer Schmid is at the forefront of innovation in the energy service sector. Recognizing the potential for unmanned aerial vehicle (UAV) technology to redefine industrial grade inspections, the two entrepreneurs and their engineering team have developed an

end-to-end technology platform that produces high-quality inspection results with ease – precisely, repeatably, efficiently.

To date, Sulzer Schmid has inspected wind turbines in more than 30 countries world wide using their 3DX™ technology. The capture part of the 3DX™ Blade Platform al-

lows for up to 18 wind turbines to be inspected in a single day. The data processing and exploration part of 3DX™ can handle several hundred thousand annotations per customer. All together, it underpins the commitment of Sulzer Schmid to the highest quality, efficiency, safety and ground-breaking use of technology.