

## Improving Quality Control Using Alerting and Notification Capabilities

### INDUSTRIAL CASE STUDY

Hartzell Propeller, Inc. is the global leader in advanced aircraft propellers and aircraft propeller manufacturing technology. Hartzell Propeller has over 30 years of experience in the design and manufacturing of structural composite blades.

VIMANA's technology enables you to monitor and manage manufacturing productivity. VIMANA's software identifies periods of production losses using a sophisticated classification engine and provides users with the information and insight needed to improve utilization.

"VIMANA Elevate has given us the capability to make data-driven decisions, which has helped us improve the quality and reliability of our composite manufacturing process. We can react immediately and avoid Monday morning autopsy."

-Brian Roberts, Director of Manufacturing



Hartzell Propeller used VIMANA Elevate for powerful alerting and notification capabilities to monitor process conditions and improve quality control of temperature and humidity controlled rooms at their composite blade facility.

The facility had high quality processes including a capable monitoring system for the composite fabrication chambers. The Hartzell team wanted to go beyond monitoring and gain insights from real-time process analytics.

**WHY VIMANA?** Hartzell Propeller selected VIMANA Elevate to go beyond monitoring and gain insights from real-time process analytics – insights that can be applied in achieving sustainable improvements to the process quality.

### The Challenge

#### Critical quality parameters

The composite blades undergo a series of heating and cooling processes in controlled rooms, and it is critical that these rooms consistently operate within a specified process parameter range.

#### Controller alarms notification

The plant had audio-based controller alarms to be notified of quality spills. They wanted to go beyond these alarms to a ubiquitous alerting and notification system.

#### Historical data to perform analysis

The plant had existing diagnostic systems in place to tackle quality spills. They wanted to improve these systems with historical context to identify why alarms occurred.

## The Implementation

### 1 Connectivity

#### Data streaming from multiple sensors and process controllers

VIMANA Connect was applied to capture data from three distinct environments in the composite blade facility: Temperature and Humidity Controlled Rooms, Freezers, and Ovens.

### 2 Analytics

#### Real-time dashboards and alerts to identify critical process conditions

VIMANA Elevate generated alerts when the environments of the chambers exceeded the control limits. The dashboards displayed real-time process parameters and a visual representation of each room's state.

### 3 Continuous Engagement

#### Iterative approach to configure capabilities and add value

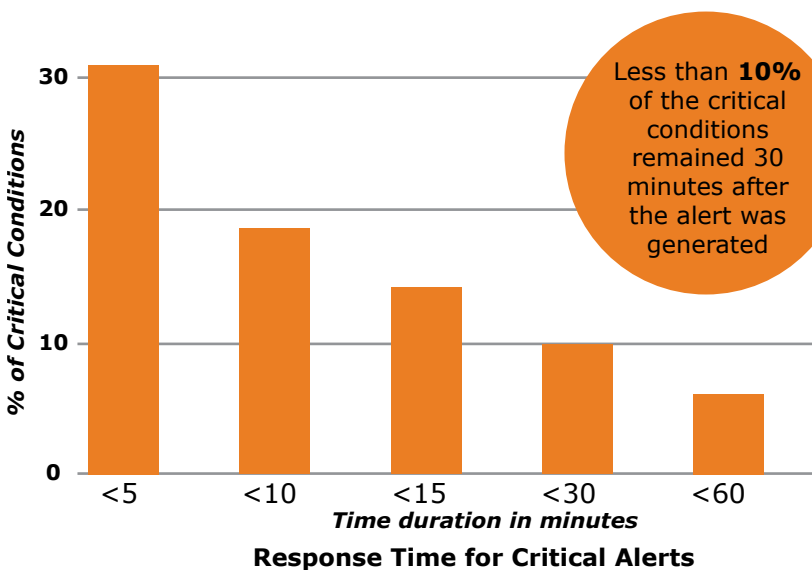
The VIMANA's Client Services team held weekly meetings with Hartzell's engineers to identify further areas in monitoring and improving quality control in the chambers. Newly identified reporting capabilities and alert configurations helped Hartzell in addressing process issues.

## Impact: Data Driven Decisions

- Employees can now step away from the controlled rooms as a monitor displays the Dashboard with real-time process parameters.
- The email notifications sent by VIMANA Elevate improved the response time and shop floor ownership of the team at Hartzell in addressing critical cases.
- Time based alerts which repeated until conditions returned to acceptable levels helped the engineers better understand the severity of the conditions.
- Alerts were implemented based on historical behavior to give the team enough time to perform corrective actions without creating a barrage of notifications.
- VIMANA Elevate's analytical reports revealed hidden trends that Hartzell used to implement new quality control measures. Historical reports allowed Hartzell to see which efforts had the most impact.

### Value

Hartzell Propeller Inc. avoided over **\$470,000** in scrapped parts in a single incident, by pro-actively responding to the alerts from VIMANA Elevate.



### Summary

Hartzell Propeller has leveraged real-time alerting capabilities of VIMANA Elevate in ensuring their strict quality standards are consistently maintained. Measures that were implemented were, changing the ceiling tiles in each room, adding vinyl curtains to doorways, and improving the insulation of the rooms. These benefits were immediately realized while others were revealed through the analytics and insights that VIMANA Elevate provides. The VIMANA's Client Services team works continuously with Hartzell Propeller to ensure that VIMANA Elevate delivers value throughout their entire facility.