

# Williams saves 300 hours per year with safer, more effective process for wind-tunnel testing.

### Situation

For one of the world's top racing organizations, it's not enough to be the fastest on the track—it has to be the fastest to the track, as well. That's how Williams Martini Racing, the world-renowned Formula One racing organization, sees it.

And one of the challenges to the speed that Williams needs has been the time to design and test its cars. Wind-tunnel tests are crucial—but were preceded by time-consuming manual checks to ensure that expensive prototypes would not damage or be damaged by the even more expensive testing facility. These pre-test manual

checks were a highly iterative process, consuming the time of the aerodynamicists who requested them, and of the lead engineer who had to cleanse the data rather than focus on providing more effective testing protocols and facilities.

### Solution

Williams turned to its technology partner, Avanade, for help with this challenge. Avanade explored the possibilities to overcome this challenge with Williams and came up with the concept of a Sequence Validator that gets prototypes into the wind tunnel faster and helps to ensure a higher degree of success once they're there.

To foster the speed of innovation needed, Avanade used an Agile software development approach to get the sophisticated solution to Williams in just three months—the software equivalent of a Williams race car passing the checkered flag. The solution digitally automates the previously manual process of analyzing and running quality checks on service requests from the organization's aerodynamicists, to help ensure that the combinations of prototype designs and requested wind tunnel simulations can be performed safely.

## Case Study

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An aerodynamicist receives not just “pass/fail” results, but also an estimate for the time to perform the entire sequence, and feedback on the values contributing to a failure, to help guide continued work. Avanade also built a portal for the process that streamlines and speeds the workflow around what had been a more ad hoc, email-driven process.

### Benefits

- **Saves 300 personnel-hours per year.** The Lead Engineer reinvests that savings in developing new innovative testing methodologies and test facility enhancements, which drives better and faster development of new cars and car technologies.
- **Spurs optimal design and development.** Because aerodynamicists receive check results on their designs immediately rather than only after hours, and because they now

have complete transparency into the design-check process, they can get to optimal designs, and do so quickly, with fewer iterations.

- **Speeds response time for imminent needs.** By shaving hours off the pre-testing approval process, Williams can now conduct some air-tunnel tests—that previously required two days—on a same-day basis. That’s an immense help when a new design must be tested for a Grand Prix race that may be just days away.
- **Supports enhanced service for Williams’ customers.** Williams is more than a racing organization; it also provides its testing facilities to external customers. Williams quickly realized that it can use the Sequence Validator to extend the same benefits to these external customers, turning a technology solution into a tool for business value and competitive advantage.

*“We can drive our development process harder and faster, and get cars into and through the wind tunnel more safely and successfully, thanks to Avanade.”*

*—Jonathan Williamson,  
Lead Engineer, Williams  
Martini Racing*



#### About Avanade

Avanade leads in providing innovative digital services, business solutions and design-led experiences for its clients, delivered through the power of people and the Microsoft ecosystem. Our professionals combine technology, business and industry expertise to build and deploy solutions to realize results for clients and their customers. Avanade has 27,000 digitally connected people across 23 countries, bringing clients the best thinking through a collaborative culture that honors diversity and reflects the communities in which we operate. Majority owned by Accenture, Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at [www.avanade.com](http://www.avanade.com).

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