

News Release

MEDIA CONTACTS: Avanade: Katy Shrimpton Phone: +44(0) 7584 106 688 Email: k.shrimpton@avanade.com

GOLIN: Nish Ratanji Phone: + 44(0) 207 067 0762 Email: <u>nratanji@golin.com</u>

AVANADE TRACKS WILLIAMS MARTINI RACING PIT CREW BIOMETRICS TO BOOST FUTURE F1 PERFORMANCE

Innovative biometric data and analytics is enabling Williams to learn about its pit crew performance to save precious seconds during future races

LONDON – December 07, 2016: <u>Avanade</u> is helping Williams Martini Racing, one of the most successful Formula One teams in history, exploit biometric data in order to critically analyse every aspect of pit stop performance and maintain the competitive edge against their rivals after their impressive, record-breaking pit stop times in 2016.

Avanade has worked with Williams during the 2016 season to capture and evaluate a range of biometric data (heart rate, breathing rate, temperature and peak acceleration) for key members of the pit crew to harness the power of digital to drive changes in human performance. Real-time data from individual team members is captured and uploaded to a database powered by Microsoft Azure. Multiple data sets are then processed using Microsoft Power BI data visualisation technology and displayed through Avanade's Biometrics Analytics Dashboard.

The team's Human Performance Specialist will use the dashboard to assess the information gathered throughout this season to gain a better understanding of the areas that need improvement to achieve consistently fast pit stops. For example, analysis of data gleaned from the bio-harnesses will provide insight into the physiology behind 'the perfect pit stop'. Further analysis will seek to discover if information from the biometric data can inform specific aspects of the individual's fitness training objectives. Bespoke performance reports could then emphasise, for example, working in a particular heart rate zone in order to reduce the cardiovascular recovery period. Initial findings are suggestive of other influential factors on performance such as stress and caffeine intake. Targeted training and other actions to improve performance will then be taken ahead of the 2017 F1 season.

Williams Martini Racing's pit crew is already one of the strongest in the pit lane, having completed the fastest pit stop of the 2016 season at 1.92 seconds, and earning the DHL Fastest Pit Crew award at the Abu Dhabi Grand Prix in November. The work with Avanade should help the team remain the pit stop pacesetter in 2017, helping its drivers Valtteri Bottas and Lance Stroll to gain precious time that could improve their track position and give them a greater range of strategy options.

"Working with Avanade will enable us to continue to push the boundaries of pit stop potential and will help us use additional data streams to ensure we stay a step ahead of our rivals," said Gemma Fisher, Human Performance Specialist for Williams Martini Racing. "By optimizing the performance of our pit crew we aim to consistently achieve the quickest pit stop times in 2017 to help Valtteri and Lance in their bid to deliver successful performance on track."



The biometrics work with Williams is an example of how Avanade is helping businesses develop a connected IoT (Internet of Things) ecosystem to maximise business value by combining IoT operational technologies with business information.

"Time is truly of the essence when it comes to pit stops in F1. It is great to see a company like Williams Martini Racing embrace technology from Microsoft to capture and analyze biometric data, to enhance their pit stop performance in the 2017 season and maintain a competitive edge," said Chris Miller, Global CTIO, Avanade.

Avanade has been working with Williams Martini Racing since January 2015, helping the organisation with its digital transformation efforts. Williams is making investments to create a digital workplace at its factory in Grove, Oxfordshire and at each circuit it visits during the racing season. Avanade also constructed the team's new website ahead of the 2016 season and developed a tyre optimisation tool for analyzing car performance.

About Avanade

Avanade is the leading provider of innovative digital and cloud services, business solutions and designled experiences 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 our clients and their customers. Avanade has 29,000 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.

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About Williams Martini Racing

Williams is a leading Formula One team and advanced engineering company. Formed in 1977 by Sir Frank Williams and Sir Patrick Head, the company has secured 16 FIA Formula One World Championship titles since its foundation. The company's core competencies are the design and manufacture of Formula One race cars, and the deployment of this expertise in running the team's entries into the Grands Prix each season under the name WILLIAMS MARTINI RACING.

Williams Advanced Engineering is the division of Williams that harnesses Formula One derived technology, development pace and knowledge to deliver highly innovative products and services to the motorsport, automotive, aerospace, defence and energy sectors. Working in close collaboration, Williams Advanced Engineering helps its customers meet the sustainability challenges of the 21st century and improve their performance, market position and brand image.

Williams Heritage is a new division established in 2014 that focus on preserving Williams' historic assets and showcasing these to fans across the globe. This includes curating the Williams Grand Prix Collection, the largest private collection of Formula One cars in the world, public demonstration of Williams' classic racing cars, and the sale of select racing cars to private individuals.

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