



INDUSTRY

Automotive

HEADQUARTERS

Surrey, United Kingdom

REVENUES

GB£ 871.27 million

EMPLOYEES

3,178

“Because SD-WAN offers us more control over data flows during crucial moments, it gives us an edge. I also think it proves the willingness of our Technology Partners to deliver, to bring their expertise to the party, with the ultimate goal of driving the team faster.”

-Zak Brown,
Executive Director of
McLaren Technology Group

Versa Redefines McLaren's F1 Speed Strategy

McLaren Racing Limited is a British Formula One (F1) team, and a wholly owned subsidiary of the McLaren Group, a British conglomerate based in Woking, Surrey, United Kingdom. They are the second most successful team in Formula One history after Ferrari, having won 182 races, 12 Drivers' Championships, and eight Constructors' Championships.

Challenges

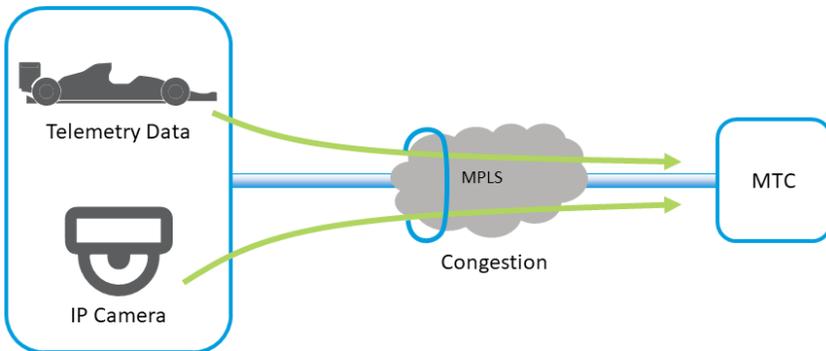
Two-time F1 world champion Fernando Alonso (currently racing for McLaren F1) spoke during a keynote speech at [Mobile World Congress in February 2018](#), about the growing importance of data analytics for both machine and driver performance: “Each car provides more data every single second than you can imagine. Every single movement we do in the car, every steering wheel input, every throttle input, every brake pressure input is transmitted immediately in real time to the engineers in the garage,” he said.

Racing data acquisition is the recording of parameters that allow an engineering team to later analyse the behaviour of the entire car or specific data points like engine RPM, fuel temperature, pressure, wheel speed, damper displacement, suspension load, etc. Each F1 car has around 1.25 kilometres of wiring and approximately 200 sensors, some of which generate data readings of up to 1,000 times per second. A single race-car can generate around 1.5 billion samples of data every race, consuming more than 100 gigabytes of storage.

This steady and massive flow of data is crucial for the McLaren engineering team to gain insights into the performance of both car and driver during a race. Real-time access to this data enables the engineering team to make critical changes or on-the-fly adjustments that can improve the performance of both the driver and the car on the race track.

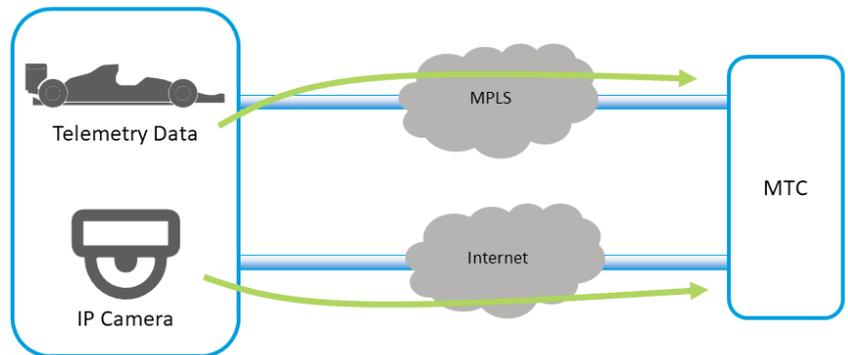
One of the challenges that McLaren was facing came to light when an R&D engineer from the McLaren team attending a pre-season practice in Barcelona in 2017, noticed occasional video jitter on the screens in the garage. The engineering team found that the issue was that the media rich data was flowing through a congested and low-capacity MPLS.

The McLaren team realized that the telemetry data, and IP-based real-time camera feed from the car and the racing track was being routed through the same MPLS circuit. This resulted in the IP camera feeds quality being negatively impacted due to the congestion causing jitter.



MTC: McLaren Technology Centre

The McLaren Technology team was looking for a solution that will help improve their access to real-time sensor data with reliability and stability. The speed at which the copious amount of data (a significant portion of which is media-rich data like video) needed to be transferred in real-time seemed like a daunting task for legacy WAN technologies. This was even more challenging because the data needed to be transmitted to McLaren's Technology Centre in the United Kingdom from F1 circuits located across the globe.



MTC: McLaren Technology Centre

Another challenge that the McLaren team wanted to tackle was the fact that the 20 Formula One races are held at various racing circuits across the globe. The McLaren engineering team needs to rapidly set up the on-track network infrastructure typically on Monday and Tuesday before each race weekend, and quickly dismantle the entire set-up post-race to transfer the equipment to the next race location as quickly as possible, well ahead of the next competition.

The Solution

The McLaren engineering team had three critical challenges that they needed to address:

- Ensure maximum and intelligent utilization of available bandwidth at any moment in time with automated intelligent dynamic traffic steering and prioritization of traffic
- Provision on-demand bandwidth for the high-speed transmitting of media-rich telemetry data, cost-effectively.
- Deploy a network in as little time as possible at different locations before each race.

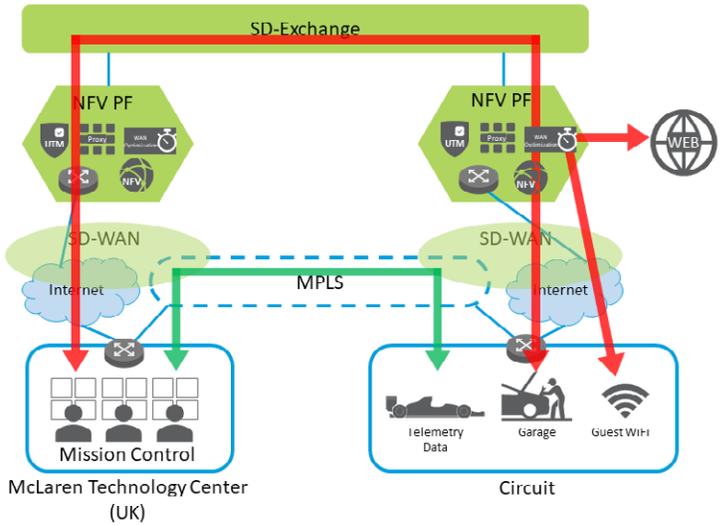
McLaren partnered with NTT Communications, a subsidiary of [Nippon Telegraph and Telephone \(NTT\) Corporation](#), the largest telecommunications company in Japan and worldwide, to provide network and SD-WAN services to McLaren for reliable high-speed data transfer. NTT's SD-WAN offering is powered by Versa Networks, an SD-WAN leader whose Cloud IP Platform delivers integrated networking, security, automation and analytics for a secure software-defined edge infrastructure.

Leveraging NTT's reliable and vast global connectivity with Versa's Secure SD-WAN, McLaren completed a successful test deployment during the 2017 Japan Grand Prix. McLaren was able to send 100GB of data without any jitter or delay during the race from the race-pit in Japan to the company's technology centre in the UK.

The successful test deployment convinced McLaren that the benefits and the value-add of SD-WAN will enable their edge infrastructure to be more agile and give them an edge over their competition.



McLaren Racing Trackside Network



NTT and Versa together provide McLaren with reliability, security, stability and flexible management of their data traffic flows. McLaren now leverages direct internet access as an additional path along with a primary MPLS circuit – turning each race-pit into a Hybrid-WAN connected edge. Direct internet access allows flexibility to accommodate for any sudden spikes in bandwidth demand during a race. SD-WAN enables prioritized and dynamic traffic steering of mission-critical race data, such as telemetry and video, by recognizing the underlying network performance and application experience, ensuring the traffic is always steered through the best possible path.

The solution optimizes the use multiple transports (internet, MPLS, wireless) to direct and prioritize traffic based on pre-set parameters like time, data-priority, application, application and network experience. Additionally, McLaren can see network and bandwidth availability and capacity need quickly to immediately optimize data transmission during a race, giving them an edge to adjust and deploy changes in real-time.

The Benefits

11.8 Billion

data points prioritized per racing season



0% Downtime



Centralized Control

and deployment facilitate faster and simplified setting up of network systems at individual locations before every race



With Versa’s SD-WAN, McLaren benefits from a software-defined platform which enables the engineering teams to quickly set up the network infrastructure before every race. Single touch deployment and centralized control and provisioning of network services like secure track to HQ connectivity, application traffic policies, unified threat management (UTM) and web proxy, makes it easier and quicker for them to set up secure optimized network connectivity in preparation of race weekend.

McLaren plans to roll out SD-WAN for all its 2018 races. Formula One just got a little more interesting.

