Formula One Engine Control Units (ECUs) – How do they work?

Formula One car collects and transmits data from the racing track

Every Formula One car is equipped with an Engine Control Unit (ECU): a small box installed inside the car which is connected to more than 100 sensors located on the vehicle. It collects the all important data used to control the powertrain, monitor health of the system and optimise the race set-up.

The team at the pit wall monitors data received

The racing data collected by the ECU is transmitted to a data server in the garage and critical information is extracted and sent to the PCs of the technical staff and engineers located on the pit wall. This information is used to make split-second decisions during a race.

Microsoft technology used: Microsoft® Excel®, Microsoft® Windows® XP

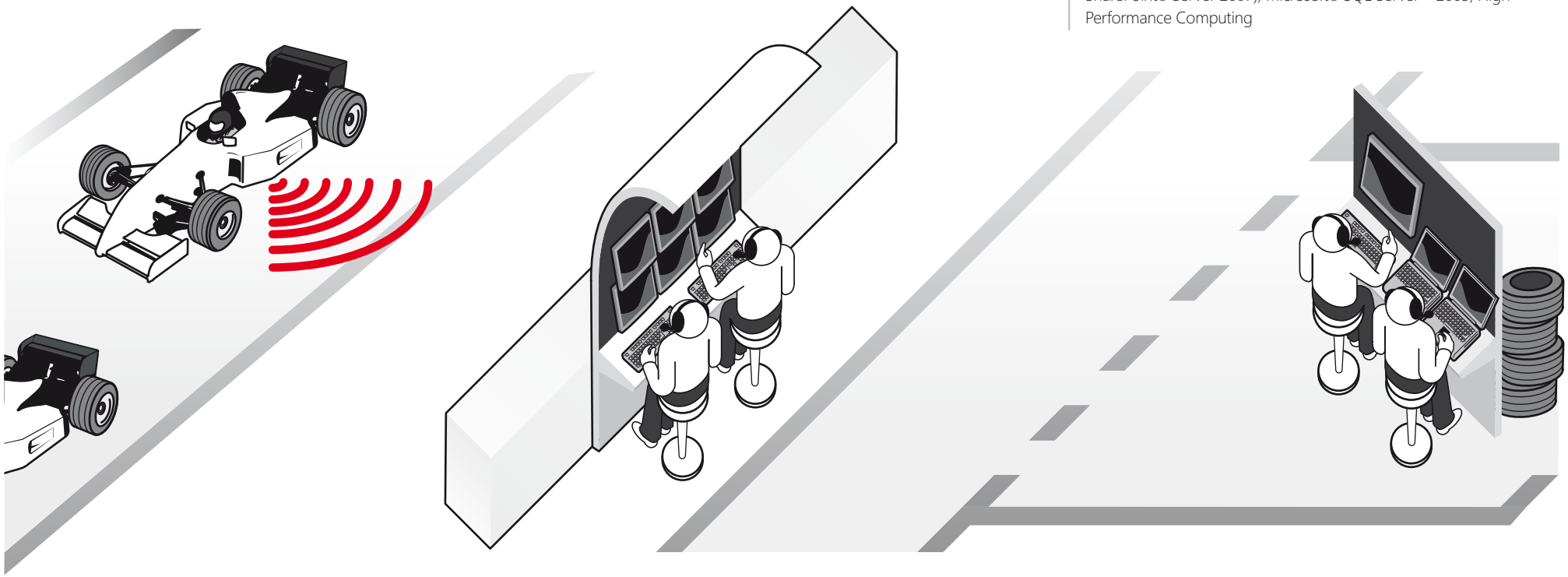
Microsoft technology soon to be adopted: Microsoft® Windows Vista™, 2007 Microsoft® Office system (Including Microsoft Office SharePoint® Server 2007)

The garage team analyse data

At the same time racing data is also delivered to the technical staff working in the garage. Here data servers are set up for each race to receive and store over one gigabyte of information in real time from each car. The data is analysed in depth at the track or back at the team's HQ. The data collected in real-time will help the team make better and faster decisions on their racing strategy, vehicle set up and car performance for the current and future races.

Microsoft technology used: Microsoft® Excel®, Microsoft® SQL Server™, Microsoft® Windows® XP, Microsoft® SharePoint®

Microsoft technology soon to be adopted: Microsoft® Windows Vista™, 2007 Microsoft® Office system (Including Microsoft Office SharePoint® Server 2007), Microsoft® SQL Server™ 2005, High Performance Computing



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