



Media Information
ABB FIA Formula E Championship
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From virtual to reality: Development and race preparation in the BMW i Motorsport simulator.

- **BMW i Motorsport uses in-house simulator in the development of the BMW iFE.18 and preparation for the races.**
- **Intensive simulator work as foundation for success in Formula E.**
- **BMW Motorsport simulator can be used for all racing projects and is compatible with the BMW Group simulators from series production.**

Munich. Before a Formula E car like the BMW iFE.18 can win races on the track, a great deal of virtual development and preparation work is required. The engineers working on the BMW i Motorsport project use a custom developed and built simulator for that work. It is in this simulator that the majority of testing takes place – both in the development phase as well as in immediate preparation for the race weekends. Without a sophisticated simulator, successful participation in the ABB FIA Formula E Championship would not be conceivable. Here is an insight into the virtual world of BMW Motorsport.

It is the same routine ahead of every Formula E race weekend: The BMW i Andretti Motorsport drivers António Félix da Costa (POR) and Alexander Sims (GBR) travel to Munich (GER), to the BMW Motorsport headquarters, together with the BMW i Andretti Motorsport race engineers for a test session – and not in a real race car on the track, but in the simulator. That is where they prepare themselves for the street circuits on the Formula E calendar and work with the team engineers meticulously going through all conceivable scenarios that could occur at the race weekend. Set-up opportunities, weather, safety car, energy management, ATTACK MODE: The simulations cover all eventualities within the scope of the technical possibilities.

“It is incredibly valuable – especially for me as a rookie – getting to know the tracks in the simulator and getting a feeling for the speeds,” said Sims, who made his Formula E debut at the season opener in Ad Diriyah (KSA) in December. “However, it is just





as valuable simulating energy management and trying out various strategies for the race.”

As close to reality as possible in software and hardware.

During this kind of race simulation, every detail is taken care of. The focus is on the virtual car in the software, which BMW Motorsport engineers programme themselves. It maps all the parameters of the driving dynamics as realistically as possible. The software is optimised for racing use, but is also compatible with every other simulator environment within the BMW Group and thus provides valuable synergies between motorsport and series production.

In addition to the software, the hardware also replicates the relevant areas faithful to reality. The driver's cockpit environment, meaning the seating position, controls and everything else that they see and touch correspond to reality 1:1. The same applies to the engineers. Their working environment is the same in the simulator as it is at the racetrack. Like the software, all elements of the hardware are built by the BMW Motorsport engineers themselves. The focus is always on maximum functionality.

Simulator indispensable during the development of the BMW iFE.18.

Besides the race preparation the simulator is essential for the development of all different car concepts at BMW Motorsport – the BMW iFE.18 being one of them. It enabled engineers to test things with the drivers that either would not have been possible to try out at all, or only possible with great effort in terms of time and resources. A simulator is essential for the Formula E project in particular.

The importance of virtual reality is also growing in BMW Motorsport's other race projects, so the simulator is used frequently. It was designed for multifunctionality right from the start and can be used to simulate all BMW racing cars. It only takes a few hours to modify the simulator from a Formula E to a DTM configuration, for example – making it ready for virtual test drives in the BMW M4 DTM.

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