

Key Characteristics: Sailing helps to close the gap between customer fuel economy and homologation • S&S Sailing can applies for “Eco-Innovation” allowing 7% CO2 credits on mNEDC and has even higher potential on real world driving • s&S Sailing technology has a very favorable cost/benefit ratio •

Development of a Stop&Start sailing strategy for next generation powertrains

The Stop & Start (S&S) system has been favourably accepted by OEMs lately, as it offers significant fuel economy improvements at minimal cost. It removes the engine’s drag torque when no traction is required, preventing it from burning extra fuel.

According to upcoming homologation cycles and due to more stringent CAFE (Corporate Average Fuel Economy) targets, S&S should be further improved by being operated even when the vehicle is in motion. This new operating mode is known as Sailing: it decouples the engine from the driveline during coasting, extending the distance covered by the vehicle and shutting off the engine.

The automation of transmissions paves the way to the introduction of this feature. This project aims at defining the main characteristics

of this new feature: in order to assess the benefits of the sailing feature over real-driving conditions, an innovative control strategy has been developed and implemented into a simulation tool for the benefit of preliminary quantification. Starting from the lessons learned, a prototype vehicle was built and implemented with a proper logic for the autonomous management of the clutch during the activation of the feature.

Then, through an experimental test campaign on a C-segment vehicle powered by mid-sized EU6 diesel engine, the fuel economy potential and the impact on diesel emissions of S&S Sailing over real-world driving cycles were quantified. Finally, a clinical survey was performed to study the phenomenon with normal drivers and investigate the level of acceptance of the actual prototype vehicle •

