

CASE STUDY

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ATI and FORD: An Effective Partnership in a Competitive Industry

The automotive industry is a highly competitive business, with new product introduction timescales continually being compressed, legislation becoming more restrictive and constant pressures on cost. To help develop new products quickly and cost-effectively Ford Motor Company, one of the industry giants, has for many years used calibration tools from ATI for engine management system development, in a long-term relationship that has brought benefits to both companies.

According to Trevor Griffiths, Ford's Calibration Tools Specialist at Dunton, Essex, the key to success has been working in partnership, with each company contributing its expertise. "As a manufacturer, our core skills are in vehicle development," he explained. "ATI contributes specialist knowhow in particular areas, sometimes managing specific projects for us. Together we can achieve better results, more quickly and more efficiently."

In a career spanning over 40 years, from carburettors to direct injection, Griffiths has been at the cutting edge of engine management technology since it first appeared during the 1980s and has used ATI VISION software for over 20 years. "Historically, there have been a series of developments in performance and capability, sometimes driven by the ECU, sometimes by the software," he said. "The ATI product range has evolved through CAN, to emulators, then serial interfaces; in each case there has been a jump in performance, bandwidth or ease of use. Being at the forefront of these changes has given Ford an edge over its competition by shortening development timescales and costs."

"One of the biggest step changes was the introduction of ATI No-Hooks™ Rapid Prototyping Software within the VISION suite, which allowed engineers to experiment with prototype software without continually referring back to the production intent ECU supplier," Griffiths explained. "Removing the production supplier from each development loop speeds up progress dramatically and cuts cost, because production levels of software robustness and safety are not appropriate until we approach the final specification."

No-Hooks allows the user to bypass an existing control strategy variable and substitute an alternative, user-defined variable. The traditional prototyping alternative would be to formally request hooks in the code from the ECU suppliers, which not only requires the accurate definition in advance of every hook needed, but is often cost prohibitive. Using ATI tools, Ford can experiment and test the No-Hooks rapid-

prototype control strategies autonomously and without restriction, on the actual production-intent ECUs. This minimises mistakes and provides the confidence to request production changes in parallel while continuing to calibrate the No-Hooks rapid-prototype strategies, compressing development timescales.

With hundreds of engineers working worldwide on different engine calibration programmes, it is vital that common methodologies can be applied, so staff do not have to learn new approaches for each new job. “Because ATI’s toolset is intuitive, user-friendly and flexible enough to operate with other systems, we are able to use it ‘across the board’ which means engineers develop greater skill levels and are more productive; they don’t have to continually learn new procedures,” said Griffiths.

‘Across the board’ means ATI supplies Ford with approximately 90 percent of its calibration tools; a trusted position based on the robust performance of ATI products in what is often a harsh or aggressive vehicle environment. According to Griffiths, Ford also appreciates ATI’s independence from any individual vehicle manufacturer or ECU supplier, because effective collaboration requires close cooperation between both parties. “Trust works both ways,” he said. “Ford and ATI each share confidential information, often working in the spirit of our agreement rather than to the letter of the contract, in order to develop better solutions. Because ATI is honest about the capabilities of its products and takes the time to understand our requirements, sometimes developing bespoke features, we in turn have the confidence to commit to their widespread use.”

ATI UK and India CEO, Umesh Patel, echoes the view that the long term relationship benefits both parties. “With Ford, we are continually exposed to cutting edge applications that make new or extended demands on our products,” he said. “This keeps us highly competitive and clearly focused on the performance elements that are most important to the user.”

Recognising the value of such a close relationship, ATI is keen to guard against complacency. “We appreciate that we’re only ever as good as our last project,” said Patel. “That keeps us on our toes, pushing towards the next target.”



2016 Ford Focus RS